



**ALASKA POLLUTANT DISCHARGE ELIMINATION SYSTEM
PERMIT FACT SHEET – DRAFT**

Permit Number: AK0052388

Peter Pan Seafood Company, LLC. – King Cove Facility

**ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Wastewater Discharge Authorization Program
555 Cordova Street
Anchorage, AK 99501**

Public Comment Period Start Date: **insert date**

Public Comment Period Expiration Date: **insert date**

[Alaska Online Public Notice System](#)

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Proposed issuance of an Alaska Pollutant Discharge Elimination System (APDES) permit to

PETER PAN SEAFOOD COMPANY, LLC

For wastewater discharges from

Peter Pan Seafood Company, LLC - King Cove Facility
500 Cannery Row
King Cove, AK 99612

The Alaska Department of Environmental Conservation (the Department or DEC) proposes to reissue an APDES individual permit (permit) to Peter Pan Seafood Company, LLC – King Cove facility (Peter Pan or the facility). The permit authorizes and sets conditions on the discharge of pollutants from this facility to waters of the United States. In order to ensure protection of water quality and human health, the permit places limits on the types and amounts of pollutants that can be discharged from the facility and outlines best management practices to which the facility must adhere.

This fact sheet explains the nature of potential discharges from Peter Pan Seafood Company, LLC and the permit development, including:

- information on public comment, public hearing, and appeal procedures
- a listing of proposed effluent limitations and other conditions
- technical material supporting the conditions in the permit
- proposed monitoring requirements in the permit

Public Comment

Persons wishing to comment on or request a public hearing for the draft permit may do so in writing by the expiration date of the public comment period.

Commenters are requested to submit a concise statement on the permit condition(s) and the relevant facts upon which the comments are based. Commenters are encouraged to cite specific permit requirements or conditions in their submittals.

A request for a public hearing must state the nature of the issues to be raised, as well as the requester's name, address, and telephone number. The Department will hold a public hearing whenever the Department finds, on the basis of requests, a significant degree of public interest in a draft permit. The Department may also hold a public hearing if a hearing might clarify one or more issues involved in a permit decision or for other good reason, in the Department's discretion. A public hearing will be held at the closest practicable location to the site of the operation. If the Department holds a public hearing, the Director will appoint a designee to preside at the hearing. The public may also submit written testimony in lieu of or in addition to providing oral testimony at the hearing. A hearing will be tape recorded. If there is sufficient public interest in a hearing, the comment period will be extended to allow time to public notice the hearing. Details about the time and location of the hearing will be provided in a separate notice.

All comments and requests for public hearings must be in writing and should be submitted to the Department at the technical contact address or email identified above (see also the public comments section of the attached public notice). Mailed comments and requests must be postmarked on or before the expiration date of the public comment period.

After the close of the public comment period and after a public hearing, if applicable, the Department will review the comments received on the draft permit. The Department will respond to the comments received in a Response to Comments document that will be made available to the public. If no substantive comments are received, the tentative conditions in the draft permit will become the proposed final permit.

The proposed final permit will be made publicly available for a five-day applicant review. The applicant may waive this review period. After the close of the proposed final permit review period, the Department will make a final decision regarding permit issuance. A final permit will become effective 30 days after the Department's decision, in accordance with the state's appeals process at 18 AAC 15. 185 – 15.340.

The Department will transmit the final permit, fact sheet (amended as appropriate), and the Response to Comments to anyone who provided comments during the public comment period or who requested to be notified of the Department's final decision.

Appeals Process

The Department has both an informal review process and a formal administrative appeal process for final APDES permit decisions. An informal review request must be delivered within 20 days after receiving the Department's decision to the Director of the Division of Water at the following address:

Director, Division of Water
Alaska Department of Environmental Conservation
P.O. Box 111800
Juneau, AK 99811

Interested persons can review 18 AAC 15.185 for the procedures and substantive requirements regarding a request for an informal Department review.

See <http://dec.alaska.gov/commish/review-guidance/informal-reviews> for information regarding informal reviews of Department decisions.

An adjudicatory hearing request must be delivered to the Commissioner of the Department within 30 days of the permit decision or a decision issued under the informal review process. An adjudicatory hearing will be conducted by an administrative law judge in the Office of Administrative Hearings within the Department of Administration. A written request for an adjudicatory hearing shall be delivered to the Commissioner at the following address:

Commissioner
Alaska Department of Environmental Conservation
P.O. Box 111800
Juneau, AK 99811

Interested persons can review 18 AAC 15.200 for the procedures and substantive requirements regarding a request for an adjudicatory hearing. See <https://dec.alaska.gov/Commish/review-guidance.htm> for information regarding appeals of Department decisions.

Documents are Available

The permit, fact sheet, application, and related documents can be obtained by visiting or contacting DEC between 8:00 a.m. and 4:30 p.m. Monday through Friday at the addresses below. The permit, fact sheet, and other information are located on the Department's Wastewater Discharge Authorization Program website: <https://dec.alaska.gov/water/wastewater/>.

Alaska Department of Environmental Conservation Division of Water Wastewater Discharge Authorization Program 555 Cordova Street Anchorage, AK 99501 (907) 269-6285	Alaska Department of Environmental Conservation Division of Water Wastewater Discharge Authorization Program 410 Willoughby Avenue Juneau, AK 99811 (907) 465-5180
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1.0 APPLICANT

This fact sheet provides information on the Alaska Pollutant Discharge Elimination System (APDES) permit for the following entity:

Name of Facility:	Peter Pan Seafood Company, LLC – King Cove Facility
APDES Permit Number:	AK0052388
Facility Location:	500 Cannery Row, King Cove, AK 99612
Mailing Address:	P.O. Box 16, King Cove, AK 99612
Facility Contact:	Mr. Hart Schwarzenbach

Figure 1 shows the facility and discharge locations.

2.0 FACILITY INFORMATION

2.1 Background

2.1.1 Facility Location and Description

The permit and this fact sheet are based on information submitted by the applicant. Peter Pan Seafood Company, LLC owns, operates, and maintains the King Cove facility, which conducts seafood processing and seafood meal reduction. The facility is located in the Aleutians East Borough near the southwestern tip of the Alaska Peninsula, approximately 625 miles southwest of Anchorage and 18 miles southeast of Cold Bay. The facility is situated on a gravelly sand spit that divides the embayment of King Cove into a lagoon and an outer bay. The large, shallow lagoon lake drains into the cove and receives tidal exchanges from the cove. The community of King Cove, with a population of approximately 940, adjoins the facility property to the east. Also in the vicinity are a commercial and recreational boat harbor, a road connecting King Cove with the community airstrip, and several tributary streams. Figure 2 shows a map of the facility layout. The facility consists of (1) a large onshore building housing finfish processing lines, surimi processing lines, a cannery, and fish meal reduction; (2) a small crab processing building on a dock over the water; (3) a diesel-powered electrical generation plant; (4) four docks (Van Dock, Salmon/Cod Dock, Fuel/Cargo Dock, and Crab/Pollock Dock); (5) a fuel storage and distribution system; and (6) employee housing.

2.1.2 Process Overview

The facility processes around 125 million pounds of raw seafood annually, of which roughly a third is Pollock, a third is Pacific cod, and 20 percent is salmon. Finished products include canned and frozen salmon, cod and Pollock fillets, surimi, roe, frozen herring and halibut, crab, fish and bone meal, and fish oil. The facility processes year-round, with peak activity occurring from February to March and June to September.

Peter Pan receives the seafood catch at the piers and docks, offloading the catch in large vacuum lines (salmon, cod, and Pollock) or brails (crab). Seafood is machine or hand butchered in any of the several processing lines at the facility. Process water is fresh water sourced from the City of King Cove (1.0 million gallons per day (mgd)) and chlorinated salt water sourced from King Cove (2.11 mgd). The butchering wastewater is collected and passed through a rotary screening system to capture offal (i.e., residual solids from

butchering, such as fish heads and entrails), which is dehydrated and reduced to meal as a marketable secondary product.

The facility uses 27 vertical, crateless retorts to cook the canned salmon. The retorts are filled with water to cushion the cans as they drop in. Once the retorts are filled with cans, the retort water (fresh water) is drained out into cooling canals. Once the cooking process is completed, the cans drop from the retorts into the cooling canals, and the non-contact cooling water is discharged. The retort cooling water, previously discharged through Outfall 001A, is now discharged through Outfall 002A.

Outfall 002A also discharges fish meal plant condenser cooling water at a depth of - 30 ft mean lower low water (MLLW). The line is buried in rip rap at the end of the Van Dock.

The 2018 Best Management Practices (BMP) Plan describes the screened process wastewater discharged from Outfall 003A as consisting of wastewater that has been used in processing and removal of heads, guts, frames, trimmings, unusable fish, and crab shells. The collected (screened) fish waste is conveyed to a meal plant raw material bin. Wastes on the meal plant floor (including stickwater) and meal plant scrubber water, as well as ground crab shells, excess catch transfer water, and refrigeration condenser and non-contact cooling water, are pumped back to the 0.5 mm rotary screen. A tote washing room, staged on a sloped concrete pad, also drains to the rotary screen.

All fish wastes collected in the raw material bins are processed at the fish meal plant. The meal plant renders the fish waste and produces fish meal, bone meal, and oil. A meal tote dumping station allows external dumping of large fish parts directly into the raw material storage bin.

Water discharged from the rotary screen discharges through Outfall 003A to King Cove at approximately - 49 ft MLLW. The outfall line is angled up from the seafloor at a 45-degree angle. It is constructed of 8-inch welded steel pipe and is within a bracket that supports the terminus approximately five feet above the seafloor.

For facility flow diagrams, see Figure 3 through Figure 6.

Table 1: Outfall Descriptions

Number	Location	Description
002A	55.059562 N, -162.320375 W	Non-contact retort cooling water and meal plant condenser cooling water
003A	55.05895 N, -162.32051 W	Seafood processing and meal plant wastewaters

2.1.3 Process Descriptions and Pollutants of Concern

Pollutants of concern known to be present in the facility's discharge, discussed further below, include pH, biochemical oxygen demand (BOD₅), total suspended solids (TSS), settleable solids (SS), oil and grease (O&G), total residual chlorine (TRC), ammonia, temperature, and residues. Arsenic, copper, and zinc are also pollutants of concern for cooling water and require monitoring to determine their prevalence in the effluent (see discussion in Part 4.4.1).

Overview and Butchering

The major types of waste found in seafood processing wastewater are blood, offal products, viscera, fins, fish heads, shells, skins, and meat fines. Operations include product receiving, vessel unloading, sorting and weighing, preparation (butchering, scaling, filleting, skinning, evisceration), inspection and trimming, product processing (e.g., freezing), further processing (e.g., cooking), packaging, and dispatch. The butchering process adds organic materials, such as blood and guts, to the wastewater stream. Thus, wastewater from the seafood processing operations can be very high in dissolved and suspended organic materials. This results in high biochemical oxygen demand (BOD). Oils and grease are also present in high amounts. This material can settle out as SS residues. Ammonia is included in contact water effluent streams due to its production during organic matter decomposition. The 40 CFR Part 408 effluent limitation guidelines (ELG) development document recommended monitoring seafood processing wastewaters for pH even though processing waters are generally neutral.

The small residue particles from mince production can travel through the receiving waters by buoyant spreading, or horizontal spreading of mixed effluent flow due to buoyant forces caused by density difference relative to ambient density. This process can quickly spread effluent laterally over large distances in the transverse direction, particularly in cases of strong ambient stratification.

Fish Meal and Oil Production

The first step in fish meal processing is steam cooking to facilitate oil and water release. The cooked fish is then pressed to separate liquid (press liquor) and solid (press cake). The press cake is then dried to remove most of the moisture. A cyclone separates out the meal from hot air and vapors, which then pass through a scrubber to remove the entrained organic material. Solids from the press liquor are then removed by centrifugal decanters (which separate the solids, oil, and stickwater). The separated solids are dried along with the press cake. Oil from the centrifuges is stored for sale or use. Stickwater is then discharged (after being combined with catch transfer water and processing water as described in Part 2.1.2). Condenser water is also discharged as described in Part 2.1.2.

Stickwater contains high levels of BOD, TSS, and O&G. It has one of the strongest waste loads produced by the seafood industry. Scrubber and condenser water contain the same parameters, but generally lower in concentration by several orders of magnitude.

Fish meal/oil production can also result in high pH, ammonia, and temperature discharges.

Cleaning Agent and Disinfectant Discharges

Cleaning, disinfectant, and defoaming agents used for seafood processing where the permittee follows the manufacturer's use and disposal recommendations are authorized discharges under the permit. This includes the use of disinfectants added to wash down water to meet applicable state and federal sanitation standards while processing or sanitizing seafood processing areas. Wash-down activities can add residual chlorine to wastewater streams.

Catch Transfer Water

Fish are delivered to the plant from vessel holds. While some catch transfer water is discharged through Outfall 003A, some is directed back to the vessels. The permit requires that all catch transfer water routed through the facility be treated to 0.5 mm.

Catch transfer water can be high in BOD, TSS, and O&G, with concentrations dependent on how long fish are held. Additionally, catch transfer water may create foam and scum on the surface of the receiving water (violating the Water Quality Standards (WQS) for residues).

The permit authorizes Outfall 003A's discharges of catch transfer water (fish hold waste and wastewater, live tank water, refrigerated seawater, or brine) conveyed to the onshore facility.

The facility has a sign posted warning vessels not to discharge fish hold water at the dock, citing the Alaska WQS.

2.1.4 Facility History

On September 13, 1999, the EPA issued the facility a NPDES permit, which expired on September 13, 2004. The EPA-issued permit covered non-contact wastewater discharges through Outfalls 001A, 002A, and 004 and seafood processing wastewater discharges through Outfall 003A. On March 16, 2004, Peter Pan submitted a permit reissuance application to EPA, 180 days prior to the permit's expiration date, and the permit was administratively extended. Peter Pan subsequently submitted updated applications to the Department.

The previous permit authorized discharge through a fourth outfall (Outfall 004). However, the Outfall 004 refrigeration cooling and condenser water was redirected and combined with Outfall 003A. Outfall 004 is no longer a covered discharge. The facility sends domestic wastewater to the City of King Cove Wastewater Treatment Plant (WWTP); thus, it is not a covered discharge.

While the 1999 permit authorized "At-Sea" discharges, the facility has not used this discharge option. The reissued permit will no longer provide this coverage. Instead, for any "At-Sea" discharges in state waters (such as in the case of a problem with the meal plant or main outfall line or if at some point barging waste is necessary to meet effluent limitations), the permittee will be required to obtain AKG523000 Offshore Seafood Processors Wastewater Discharge General Permit coverage.

On December 29, 2020 the Department approved the transfer of permit AK0052388 from Peter Pan Seafoods, Inc. to Peter Pan Seafood Company, LLC. No changes to facility operations were associated with the permit transfer.

2.2 Discharges not Authorized by the Permit

This permit does not authorize the discharge of any waste streams, including spills and other unintentional or non-routine discharges of pollutants, that are not part of the normal operation of the facility as disclosed in the permit application, or any pollutants that are not ordinarily present in such waste streams. Discharges not covered include those that may require coverage under other APDES permits.

Unused products – The Department has been made aware through review of some processors’ at-sea disposal logs that additives or other products other than raw or cooked seafood wastes have been disposed of in state waters. The discharge or disposal of these food additives (e.g., sugars, salts) or processed by-products (e.g., oils, hydrolysates, etc.) can severely alter the chemistry of the receiving water (including by causing high BOD and chemical oxygen demand (COD) pollutant loading) and is not authorized under the permit. The restriction does not apply to by-product effluents meeting the terms of the permit.

Chemicals (e.g., sodium hydroxide, hydrochloric acid, aldehydes, ketones) that are not actively used in production or disinfection and are instead poured directly into wastewater discharge lines are prohibited discharges under Permit Part 1.3. Unmonitored and/or untreated discharges of these chemicals can lead to violations of WQS.

Hazardous or toxic substances – The WQS for toxic and other deleterious organic and inorganic substances for marine waters are codified in 18 AAC 70.020(b) and found in the *Alaska Water Quality Criteria Manual for Toxic and Other Deleterious Organic and Inorganic Substances*, as amended through December 12, 2008. The permit requires compliance with these WQS. Therefore, any toxic or hazardous substance discharges that may impair or violate WQS are prohibited.

Storm water - Both commingled and non-commingled industrial storm water discharge coverage is available under the 2020 APDES Multi-Sector General Permit (MSGP). The MSGP contains provisions that require industrial facilities in 29 different industrial sectors to implement control measures and develop site-specific storm water pollution prevention plans (SWPPP) to comply with APDES requirements. MSGP Part 1.2.1 states that to be eligible to discharge, a permittee shall have a storm water discharge associated with an identified primary industrial activity. The MSGP defines ‘Primary Industrial Activity’ as including any activities performed on-site which are identified by a list of primary SIC codes. The MSGP lists ‘SECTOR U: FOOD AND KINDRED PRODUCTS – U3’ with SIC codes as 2091-2099 Miscellaneous Food Preparations and Kindred Products. Seafood Processing falls under Section U3 SIC codes (Frozen, Fresh or Canned). Previous inspections have identified storm water discharge pipes located underneath the crab plant. These discharges are not covered under the AK0052388 permit.

For commingled discharges, the 2020 APDES MSGP Permit Part 1.2.3.1 provides coverage if the storm water is commingled with a discharge authorized by a different APDES permit (in this case, the seafood discharge).

Spoiled seafood waste - If a vessel delivers fish or other aquatic animals or plants to the permittee, or the permittee experiences a refrigeration system failure, and seafood/plant products

are “spoiled” due to temperature, histamine concentration, or decomposition, these materials are prohibited from being discharged.

Petroleum hydrocarbons, including vessel bilge waters - The facility is subject to the Environmental Protection Agency (EPA)’s Oil Pollution Prevention regulations and must have a Spill Prevention, Control, and Countermeasure (SPCC) plan. The permit requires, carried from the previous permit, that any oil or hazardous substance spills from the facility or from a vessel at the facility be immediately reported to the U.S. Coast Guard (USCG) and to DEC.

3.0 COMPLIANCE HISTORY

A review of Annual Reports containing monitoring data submitted during the early portion of the permit term revealed that the methods the permittee used to report monitoring results varied. Therefore, Table 2 presents a summary of Annual Report data from 2014 - 2022.

Table 2: Summary of Historical Effluent Limitations and Monitoring Data

Parameter	Units ^a	Effluent Limitation	Monitoring Data	
			Minimum	Maximum
Outfall 001A				
Flow	mgd	—	0.21	0.21
Temperature	°C	25	9.0	30.5
Outfall 002A				
Flow	mgd	—	1.2	1.2
Temperature	°C	25	8.1	22.4
Outfall 003A				
Flow	mgd	—	0.002	4.72
Settleable Solids (SS)	mL/L	—	0.066	1.63
	lbs/day	—	4	33,398
	lbs/year	2,700,000	448,283	2,043,162
Biochemical Oxygen Demand (BOD ₅)	mg/L	—	6	3,980
	lbs/day	—	20	68,993
	lbs/month	—	260	2,138,784
Total Suspended Solids (TSS)	mg/L	—	2.4	4,480
	lbs/day	—	5	53,862
	lbs/month	—	674	720,894
pH	SU	6.5 – 8.5	6.32 ^b	7.6
Footnotes:				
a. Units: mgd = million gallons per day, °C = degrees Celsius, mL/L = milliliters per liter, mg/L = milligrams per liter, lbs/day = pounds per day, lbs/year = pounds per year, lbs/month = pounds per month, SU = Standard Units.				
b. Permit (and WQS) violation.				

The Department and EPA took several compliance actions against the facility during the permit term. The violations cited are summarized in Table 3.

Table 3: Inspection and Compliance Action Summary

Inspection Date	Compliance Action Date	Violations Cited
August 21, 2007 (EPA)	February 25, 2008	<ul style="list-style-type: none"> Outfalls 001 and 004 were exposed and discharging to the beach. <i>The permit required discharge of non-contact cooling and scrubber waters to be at depths of at least 20 feet MLLW.</i> The rotary screen used to screen the discharge measured 4 mm x 17 mm in size. <i>The permit required that discharges of screened seafood wastes be 1 mm or less.</i> Test methods in 40 CFR Part 136 for measuring SS and pH were not followed, as required by the permit. The permittee reported discharge amounts of 7,883,130 lbs/year in 2005; 8,927,420 lbs/year in 2006; and 8,269,174 lbs/year in 2007. These amounts exceeded the permit limit of 2,700,000 lbs/year for waste ≤ 1 mm in size.
June 22-23, 2009	July 30, 2009	<ul style="list-style-type: none"> Exceedance of the 2,700,000 lbs/year SS limitation in 2008 (3,251,760 lbs/year). Exceedance of the Alaska WQS for residues (inspector observed sheens/films on water surface in dock vicinity and untreated fish waste discharged from various locations at the facility). Failure to amend the facility BMP Plan to correspond to changes in the facility and/or operations. Failure to conduct permit-required monitoring in accordance with Part I.B.5 of the permit and 40 CFR Part 136.
April 30, 2014	none	<ul style="list-style-type: none"> N/A
June 29, 2016	none	<ul style="list-style-type: none"> The facility detailed noncompliances in Annual Reports (a crab sump overflow in 2015 and three instances in 2014) but did not submit Noncompliance Notifications to DEC per the 24-hour verbal and 7-day written notification requirements.
March 21, 2018	May 22, 2018	<ul style="list-style-type: none"> Failure to report, within 24 hours, that the outfall was discovered to be broken in the 2017 dive survey.
	March 21, 2019	<ul style="list-style-type: none"> Failure to obtain prior approval by EPA and DEC before changing the configuration of Outfall 003A.

February 12, 2020	February 25, 2020	<ul style="list-style-type: none"> • BMP Plan was not signed and certified by the plant manager. • Failure to retain 2018 and 2019 Laboratory Analysis Reports and Chain of Custody records for BOD₅ and TSS onsite. • Failure to retain 2018 and 2019 Sea Surface and Shoreline Monitoring records and 2018 temperature and estimated flow volume records for Outfalls 001A and 002A onsite. • The seafloor survey conducted in 2019 did not survey the area surrounding the previous (2017) outfall terminus, nor the area where there was a break in the outfall line in 2017. • The seafloor survey conducted in 2019 did not count buried deposits as coverage area. • The seafloor survey conducted in 2019 identified Beggiatoa bacteria present north of the outfall terminus but did not specify whether such areas were included in the coverage area estimation.
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During a 2004 permit reissuance review and subsequent inspections, EPA and Peter Pan discussed the appropriate and actual discharge depth for Outfall 001A. The discussion surrounded discharge temperature and mixing zone concerns. The 1999 permit contained language “*Non-contact cooling waters and scrubber water shall be discharged at depths of twenty (20) feet MLLW or deeper. Any change in outfall configuration will require prior approval by EPA and ADEC.*” Following issuance of the 1999 permit, Peter Pan submitted a BMP Plan to EPA identifying Outfall 001A as having a discharge depth of +10 feet MLLW. Peter Pan’s justification was that allowing the water to cool as it flowed over the rocks resulted in better temperature drop than direct discharge to the waterbody at -20 ft MLLW. In 2023, Peter Pan routed the previous Outfall 001A discharge to Outfall 002A.

In spring 1998, Peter Pan installed a meal plant at the facility to reduce the seafood processing wastes being discharged to the King Cove receiving waters. The Peter Pan BMP Plan later established a minimum standard of 0.5 mm screening for all fish processing wastewaters. Peter Pan has been able to maintain a less than one-acre ZOD through operating their meal plant and using screening. A dive survey in October 2000 reported, “*The discharge pile mass has clearly reduced in the West and North directions compared to the survey conducted in 1999.*” A dive survey conducted in October 2001 showed an estimated coverage area between 0.90 and 1.1 acres. A dive survey conducted in October 2002 showed a total waste pile area of 0.83 acres. Subsequent dive surveys from 2003 through 2022 measured the waste pile as less than one acre in size. Outfall 003A was replaced in spring 2018 and placed 130 ft to the west of the previous outfall terminus, but still within the ZOD footprint. The terminus depth decreased from -63 ft MLLW to -49 ft MLLW. It is unknown how this will affect the ZOD (i.e., whether waste deposition will increase).

4.0 EFFLUENT LIMITS AND MONITORING REQUIREMENTS

4.1 Basis for Permit Effluent Limits

The Clean Water Act (CWA) requires that the limits for a particular pollutant be the more stringent of either technology-based effluent limits (TBELs) or water quality-based effluent limits (WQBELs). TBELs are set according to the level of treatment that is achievable using available technology. EPA established ELGs for the Canned and Preserved Seafood Processing Point Source Category in 40 CFR Part 408. A WQBEL is designed to ensure that the WQS, 18 AAC 70 as amended June 26, 2003, are met for the waterbody as a whole. WQBELs may be more stringent than TBELs. A more extensive discussion providing the basis for the effluent limits in the permit is provided in APPENDIX B.

4.2 Basis for Effluent and Receiving Water Monitoring

In accordance with AS 46.03.110(d), the Department may specify in a permit the terms and conditions under which waste material may be disposed. Monitoring in a permit is required to determine compliance with effluent limits but may also be required to gather effluent and receiving water data to determine whether additional effluent limits are required and/or to monitor effluent impacts on the receiving waterbody quality.

4.3 General Requirements

4.3.1 Flow Meters

Mixing zone modeling requires certain parameter inputs (e.g., outfall depth, waterbody hydrodynamics, pollutant loading, flow, etc.) to assess mixing behavior and plume geometry. In order to accurately model environmental impacts as well as fully disclose all wastewaters discharged at the facility, the permittee needs to monitor the flow volumes to accurately determine pollutant loading for each outfall. Note, the daily flow used for pollutant loading calculations must represent the pollutant sampling day's total flow, not an average daily flow. The daily flow from Outfall 003A has been metered for at least the last ten years.

4.3.2 Outfall System Requirements

The permit includes a new requirement to conduct a pre-installation biological survey prior to outfall replacement or movement. The survey must demonstrate that the proposed outfall placement will not result in discharge into "living substrate." The surveyor is required to report ambient tidal current velocity and direction and the water chemistry on the survey day, including salinity, water temperature, density, turbidity, dissolved oxygen (DO), and pH. These parameters should be taken on the day the survey is performed at the proposed outfall terminus location and depth, as a grab sample or in-situ probe sampling. For grab sampling at depth, a Van Dorn sampling bottle can be used to obtain water samples. The survey report should also contain seasonal data, if known.

The permit requires regular outfall system(s) inspections. These inspections may be performed with any number of techniques, such as pressure testing, dye testing, or visual, remotely operated vehicle, or diver inspection.

4.3.3 Waste Treatment System Inspection

The permit requires daily visual inspection of the discharge system. The permit prohibits the discharge of gloves, earplugs, rubber bands, or other equipment used during seafood processing that may be inadvertently entrained in the wastewater. Logs of daily inspections shall be kept at the facility and made available to DEC upon request.

The permit requires maintaining a written log of corrective actions taken on the solids recovery system(s) and occurrences of wastewater overflows, bypass incidents, and other operational problems. Examples of screened waste system corrective actions include screening system improvements, such as upstream removal of solids, or pump speed adjustments.

4.3.4 Monitoring and Reporting Requirements

Where sampling is required, the permittee must use a sufficiently sensitive EPA-approved test method that quantifies the pollutants to a level lower than applicable limits or WQS, or use the most sensitive test method available, per 40 CFR Part 136 (Guidelines Establishing Test Procedures for the Analysis of Pollutants), adopted by reference at 18 AAC 83.010(f).

Methods which a vendor has designated as EPA-equivalent, but which EPA has not approved for use in compliance monitoring, are not acceptable methods for the monitoring required in this permit.

The permit continues the requirement to monitor for “residues.” Residues include floating and suspended solids, debris, foam, and scum and may cause a film, sheen, or discoloration on the water surface or cause a sludge, solid, or emulsion to be deposited upon adjoining shorelines or seafloor. The permit contains limits that are based on WQBELs. In compliance with 18 AAC 70.020(b)(20), the permittee shall not discharge effluents that cause a foam, film, sheen, scum, or deposit to form on the surface of the receiving water; the adjacent shoreline; or the structures, vessels, or vessel moorages of the adjacent harbors. The permit requires recording the occurrence and extent (size and presence, or “none”) of films, foam, scum, discoloration, or sheens on the sea surface and shoreline monitoring log.

4.3.5 Discharge Monitoring Report (DMR)

The permit requires that monitoring results be recorded on a DMR and submitted monthly. Copies shall be kept at the facility and made available to DEC upon request.

4.4 Effluent Limits and Monitoring Requirements

The following summarizes the effluent limits contained in the permit (see APPENDIX B for more details).

4.4.1 Outfall 002A Effluent Limits and Monitoring (Table 4)

The permit requires monitoring daily for effluent flow, changed from weekly in the previous permit, and weekly for temperature, carried forward from the previous permit. The permit carries over the temperature limit, 25 °C, from the previous permit. Flow is limited to 3.5 mgd, as this was the highest flow modeled, and larger flows could result in a larger mixing zone that may not meet DEC requirements

The permit includes new requirements to monitor for pH, arsenic, copper, and zinc. The Department has determined that these requirements are appropriate for the Outfall 002A discharge, in accordance with the monitoring that non-contact cooling water dischargers must carry out under the state's AKG250000 general permit.

The Outfall 002A effluent flow has not previously been monitored for pH, TRC, and ammonia, which are seafood processing wastewater pollutants of concern identified under Part 2.1.3. Therefore, DEC is requiring that the permittee monitor these parameters to make future determinations about the need for WQBELs and/or the need for specific mixing zone authorizations for them. Density monitoring is required in order for the Department to collect data that may be needed to conduct mixing zone modeling in future permit issuances.

Table 4: Outfall 002A Effluent Limits and Monitoring Requirements

Parameter	Effluent Limits				Monitoring Requirements	
	Units ^a	Daily Minimum	Daily Maximum	Monthly Average	Sample Frequency	Sample Type
Flow ^b	mgd	N/A	3.5	Report	Daily	Measured/ estimated
Temperature	°C	N/A	25	Report	1/Week	Grab
pH	SU	6.5	8.5	N/A	1/Week	Grab
Total Ammonia, as N	mg/L	N/A	Report	N/A	1/Week	Grab
Density	kg/m ³	N/A	Report on Attachment A Only	N/A	1/Week	Grab
Total Residual Chlorine (TRC) ^c	mg/L	N/A	Report	N/A	1/Week	Grab
Arsenic, Total Recoverable	µg/L	N/A	Report	N/A	1/Quarter ^d	Composite ^e
Copper, Total Recoverable	µg/L	N/A	Report	N/A	1/Quarter ^d	Composite ^e
Zinc, Total Recoverable	µg/L	N/A	Report	N/A	1/Quarter ^d	Composite ^e

Footnotes:

- Units: mgd = million gallons per day, °C = degrees Celsius, SU = standard units, mg/L = milligrams per liter, kg/m³ = kilograms per cubic meter, and µg/L = micrograms per liter.
- Daily flow recorded shall be the totalized 24-hour flow meter reading.
- Monitoring for chlorine is not required if the permittee does not use chlorine as a disinfectant nor introduce it elsewhere in the seafood processing area.
- The permittee may request in writing that monitoring frequencies be reduced or eliminated for these monitor only parameters after two years of monitoring and reporting if results indicate no detections above applicable water quality criteria. Monitoring reductions can only occur if prior written approval from the Department is received.
- The compositing period shall be for 24 hours or for the total amount of time on the sampling day during which there is flow from the outfall. The composite sample shall consist of at least one equal volume aliquot per every full three hours in the compositing period.

4.4.2 Outfall 003A Effluent Limits and Monitoring (Table 5 and Table 6)

The previous permit only required monitoring Outfall 003A during the months of January, February, June, July, August, September, and October under the premise that the sampling months coincide with fishing seasons and attendant high levels of pollutant discharge. Since a review of discharge over the permit term showed that there was as much effluent flow in some previously unmonitored months as in monitored months, the Department determined that it is appropriate to require monthly effluent monitoring in this permit.

The permit retains most of the monitoring requirements established in the previous permit for Outfall 003A. The permit continues daily monitoring for flow and weekly monitoring for pH, SS, and TSS. The BOD₅ monitoring frequency was increased to weekly from monthly to align with the other pollutant monitoring. However, the BOD₅ monitoring is only required

May 1 – October 31, as this is the critical period for DO impacts to the waterbody. DEC has changed the TSS sample type from a grab sample to a composite sample. One grab sample is not sufficient to represent the variations in the effluent stream. Composite sampling is described in the *Standard Methods for the Examination of Water and Wastewater*, Part 1060B.

The permit establishes new monitoring requirements for O&G, TRC, turbidity, and temperature to provide waste and wastewater characterization data. These parameters have not previously been monitored for in the Outfall 003A effluent. Since the parameters are pollutants of concern for seafood processing wastewater, monitoring is necessary in order for the Department to evaluate whether discharges might cause an exceedance of the WQS.

Monitoring ammonia in the Outfall 003A effluent is a new permit requirement. Density monitoring is required in concurrence with the ammonia monitoring in order for the Department to collect data that may be needed to conduct mixing zone modeling in future permit issuances. Ammonia was documented as a pollutant in the 1975 Development Document for the seafood processing ELGs (40 CFR Part 408). Ammonia is entrained in fish parts and wastes and a fraction of it, depending on the pH of the receiving water, is in the unionized toxic form (EPA, 2010).

The permit limits SS discharge to 2,700,000 pounds per year, consistent with the 1998 Total Maximum Daily Load (TMDL) Waste Load Allocation (WLA) for the facility based on an authorized one-acre ZOD. The 1999 permit also allowed for the discharge of seafood waste ground to one-half (0.5) inch. Peter Pan no longer discharges ground seafood waste. Since Peter Pan is now using a 0.5 mm screen for Outfall 003A discharges (installed in 2008), the permit implements a 0.5 mm screening limitation.

Table 5: Outfall 003A Effluent Limits and Monitoring Requirements

Parameter	Effluent Limits				Monitoring Requirements	
	Units ^a	Daily Minimum	Daily Maximum	Monthly Average	Sample Frequency	Sample Type
Flow ^b	mgd	N/A	Report	Report	Daily	Measured
Biochemical Oxygen Demand (BOD ₅)	mg/L	N/A	Report	Report	1/Week ^d	Composite ^e
	lbs/day ^c	N/A	Report	Report		
Total Suspended Solids (TSS)	mg/L	N/A	Report	Report	1/Week	Composite ^e
	lbs/day ^c	N/A	Report	Report		
Oil and Grease (O&G)	mg/L	N/A	Report	Report	1/Week	Grab
	lbs/day ^c	N/A	Report	Report		
pH	SU	6.5	8.5	N/A	1/Week	Grab
Total Residual Chlorine (TRC) ^f	mg/L	N/A	0.013 ^g	0.0075 ^g	1/Week	Grab
Temperature	°C	N/A	Report	Report	1/Week	Grab
Turbidity	NTU	N/A	Report	Report	1/Week	Grab
Density	kg/m ³	N/A	Report on Attachment A Only	N/A	1/Week	Grab
Total Ammonia, as N	mg/L	N/A	Report	Report	1/Month	Grab
	lbs/day ^c	N/A	Report	Report	1/Month	

Footnotes:

- a. Units: mgd = million gallons per day, mg/L = milligrams per liter, lbs/day = pounds per day, SU = standard units, °C = degrees Celsius, NTU = Nephelometric Turbidity unit, kg/m³ = kilograms per cubic meter.
- b. Daily flow recorded shall be the totalized 24-hour flow meter reading.
- c. Loading in lbs/day = concentration (mg/L) x flow (mgd) x 8.34 (conversion factor). The permittee must use the calculations in Permit Appendix E and the daily flow (mgd) from the day sample collection occurred.
- d. The BOD₅ monitoring is applicable from May 1 – October 31.
- e. The compositing period shall be for 24 hours or for the total amount of time on the sampling day during which there is flow from the outfall. The composite sample shall consist of at least one equal volume aliquot per every full three hours in the compositing period.
- f. Monitoring for chlorine is not required if the permittee does not use chlorine as a disinfectant nor introduce it elsewhere in the seafood processing area.
- g. Effluent limits for TRC are not quantifiable using EPA-approved analytical methods. The permittee will be in compliance with the effluent limits provided the TRC levels are below the compliance evaluation level of 0.1 mg/L.

Table 6: Outfall 003A Settleable Solids (SS) Effluent Limit and Monitoring Requirements

Parameter	Effluent Limits				Monitoring Requirements	
	Units ^a	Daily	Monthly	Yearly	Sample Frequency	Sample Type
Imhoff Cone Result ^b	mL/L	Report Maximum	Report Average	N/A	1/Week	Grab
Daily Discharge	lbs/day	Report Maximum	Report Average	N/A		Calculate ^c
Monthly Total Discharge	lbs/month	N/A	Report Total	N/A	N/A	Calculate ^c
Yearly Total Discharge	lbs/yr	N/A	N/A	Limit of 2,700,000 Report Year-to-Date Total	N/A	Calculate ^c
1.13 g/mL or Facility-Specific Conversion Factor ^d	g/mL	N/A	Report on Attachment A Only	N/A	N/A	N/A

Footnotes:

a. Units: mL/L = milliliters per liter, lbs/day = pounds per day, lbs/yr = pounds per year, g/mL = grams per milliliter.

b. The permittee shall determine SS (mL/L) as the volume of solids settled in an Imhoff cone (Standard Methods 2540-F).

c. The permittee shall use the mass balance calculations/formulas found in Permit Appendix E.

d. The permittee shall use 1.13 g/mL for calculation for the first 12 months or until facility-specific conversion factor development, then report conversion factor used monthly.

4.5 Effluent Monitoring

4.5.1 Routine Monitoring

Monitoring frequencies are based on the nature and effect of the pollutant, as well as a determination of the minimum sampling necessary to adequately monitor the facility's performance. The permittee has the option of taking more frequent samples than required under the permit. These additional samples shall be used for averaging if they are conducted using the Department-approved test methods (generally found in 18 AAC 70 and 40 CFR Part 136 [adopted by reference in 18 AAC 83.010(f)]). All limits that require averaging measurements shall be calculated using an arithmetic mean unless the Department specifies another method in the permit. Monitoring more frequently for pollutant parameters found in Table 5 and Table 6 must also comply with requirements in Permit Part 1.5.3.3.

4.5.2 Pollutant Loading Calculation

The permit specifies the equations to use in calculating mass loading rates to ensure consistent reporting. The permit requires reporting the daily mass loading using a multi-step conversion process. Examples of the loading calculations can be found in Permit Appendix E.

At the time of writing this fact sheet it is unknown where the previous permit's EPA-estimated 1.17 g/mL wet weight density factor was derived, as it is not mentioned in the previous fact sheet. The King Cove TMDL references a theoretical processing waste solids density of 1.13 g/cm³. Using theoretical estimated SS wet weight densities may result in under- or over-reporting the SS lbs/day discharged, so the permit requires the permittee to ascertain a facility-specific SS conversion factor instead, within 12 months after the permit effective date.

4.6 Receiving Waterbody Limits and Monitoring Requirements

4.6.1 Water Quality Monitoring

The previous permit required a water quality monitoring program to be conducted for the first year of the permit term. The permit required seven days of water quality measurements at a minimum of three near-field effect stations, 12 far-field effect stations, and three far-field control stations. The permittee sampled for DO concentrations, temperature, salinity, and density. The permit required the water quality study to verify the discharge was not degrading the oxygen available to aquatic life in the water column. The monitoring results for samples collected revealed that DO concentrations were greater than 10 milligrams per liter (mg/L). Therefore, the Department determined that it is appropriate to reduce the monitoring frequency to twice per year (once during the winter and once during the summer stratified period). The monitoring will be required once February-March and once July-August, as these are the highest production months.

This permit continues the requirement to monitor receiving water quality to verify that the discharge does not negatively impact it. The permit requires the permittee to monitor four Ambient Receiving Water (ARW) stations at locations and for the parameters identified in the permit. The permittee must take samples at the water surface, at mid-depth, and one meter above the seafloor at each station in order to adequately characterize receiving water quality even during stratification.

The permit contains new sample labeling requirements for analysis and reporting purposes. The previous permit did not supply detailed instructions on sample naming conventions and location identification.

Table 7 presents the parameters required to be monitored at each receiving water monitoring location.

Table 7: Ambient Receiving Water (ARW) Monitoring

Parameter	Monitoring Requirements		
	Units ^a	Frequency ^b	Reporting Requirement
Dissolved Oxygen (DO)	mg/L	2 per year	Attachment A
Temperature	°C	2 per year	Attachment A
pH	SU	2 per year	Attachment A
Salinity	ppt	2 per year	Attachment A
Footnotes: a. Units: mg/L = milligrams per liter, °C = degrees Celsius, SU = standard units, ppt = parts per thousand. b. Monitoring must occur once February – March and once July – August.			

4.6.2 Zone of Deposit and Seafloor Monitoring

A ZOD is defined as a limited area where substances may be allowed to be deposited on the seafloor of marine waters. In accordance with state regulations at 18 AAC 70.210, the Department may issue a permit that allows a deposit of substances on the seafloor of marine waters within set limits. The water quality criteria (WQC) in 18 AAC 70.020(b) for marine residues may be exceeded in a ZOD. However, the WQS must be met at every point outside the ZOD. The residue standard applies to any residue discharge (whether permitted or unpermitted); however, one of the most prevalent applications of the residues standard is to permitted discharges of residues in marine waters from seafood processing facilities.

As found in 18 AAC 70.210(b), in deciding whether to authorize a ZOD in a permit, the Department considers the following.

- Alternatives that would eliminate, or reduce, any adverse effects of the deposit;
- The potential direct and indirect impacts on human health;
- The potential impacts on aquatic life and other wildlife, including the potential for bioaccumulation and persistence;
- The potential impacts on other uses of the waterbody;
- The expected duration of the deposit and any adverse effects; and
- The potential transport of pollutants by biological, physical, and chemical processes.

In 1999, DEC provided for a 1.0-acre ZOD in the State's CWA Section 401 Certification. During the permit cycle 1999-2004, the permittee was required to reduce the ZOD size from 11 acres down to 1.0 acre. The permittee met this permit requirement after mechanical pile remediation and installation of a fish meal plant as a source control strategy. The permit required surveys of the seafloor annually to determine compliance with the WQS for settleable residues in marine waters and to monitor the bioremediation of the historic waste piles.

The permit continues the requirement for seafloor monitoring to determine compliance with marine WQS for residues and to document the location, size, and boundaries of continuous and discontinuous seafood processing waste (residues) coverage. In consultation with EPA, DEC established a new methodology for determining which seafood waste deposits count toward the 1.0-acre ZOD limit. The permit requires those seafloor areas with continuous coverage (95-100%) or greater than 50% discontinuous coverage be counted toward the 1.0-acre ZOD limit. The surveys must be done in the last quarter of the year, for consistency when comparing pile size and configuration from year to year.

The permittee shall map and report the total summed area(s) of seafood waste deposit coverage within a project area ZOD boundary. Permit Appendix F includes an initial project area ZOD for the Peter Pan facility. Seafood waste is likely to be found within the operational marine footprint of the facility and not solely isolated to the immediate vicinity of the seafood processing outfall terminus.

The required map of seafood waste coverage areas must include continuous coverage (95-100%) and discontinuous coverage ranging from 50% to 94%, which are the coverage areas that count toward the 1.0-acre ZOD limit. The map must also include discontinuous coverage areas ranging from 10% to 49% and those areas with “Trace” coverage (less than 10%). Additionally, the seafloor surveying must determine the approximate thickness of the seafood waste deposits.

The selection of 50% as the coverage threshold for counting towards the 1.0-acre ZOD limit was based on results from two published studies that examined the effects of wood waste discharges from pulp mills. DEC acknowledges that the findings from these studies are not directly applicable to seafood discharges since the studied material was wood, not seafood waste. However, DEC finds that the identified wood waste studies currently provide the most meaningful proxy data until this permit term’s seafloor surveying data is collected and analyzed or new studies are completed or identified that provide useful information on the effects of seafood deposition in the marine environment applicable to the amounts of seafood waste limited by the permit.

The permit establishes clear data gathering and reporting protocols in Permit Appendix F (see Table 8 schedule).

Table 8: Seafloor Monitoring Schedule

Survey Type	Sample Location	Survey Result Triggers	Frequency
Part I Seafloor Survey	Project Area ZOD	Report as required in Permit Appendix F	The first year of permit coverage
Part II Seafloor Survey	Project Area ZOD	Report as required in Permit Appendix F	The second year of permit coverage
Additional Part II Seafloor Surveys	Project Area ZOD	Previous Part II Seafloor Survey reporting ≥ 0.75 acres of deposits	Required every year, See Permit Part 1.8.3.5.2.1
	Project Area ZOD	Previous Part II Seafloor Survey reporting < 0.75 acres of deposits	Required every two years, See Permit Part 1.8.3.5.2.2

4.6.3 Sea Surface and Shoreline Monitoring

The previous permit required daily observations of residues on the water surface within a 100-yard radius of the end of outfall(s) and a 100-yard perimeter around the facility's docks and loading areas, and on the shoreline within 0.25 miles of the end of outfall(s). The purpose of the visual monitoring for residues was to determine compliance with the WQS for residues in marine waters. These requirements are continued in this permit, although the distance extent of monitoring was broadened in order to more adequately cover potentially impacted areas. The permittee must also record observations at various tide cycle phases during the calendar month.

The permit requires the facility's observer to be located at an area from which they can see the sea surface area above each outfall terminus. The observer should also be able to see the shoreline areas of the processing facility's seaward boundaries (encompassing a minimum of 100 ft to either side of the parcel lines, and including docks and piers) while a seafood wastewater discharge is occurring. The purpose of the monitoring is to record the occurrence and extent of films, foam, scum, discoloration, or sheens (18 AAC 70.020(b)(20)). Monitoring done by the permittee must include recording the occurrence and numbers of threatened and endangered species in the survey area(s).

The permittee must submit a summary of sea surface and shoreline residues noncompliance occurrences (observations of films, foams, scum, discolorations, or sheens beyond the boundary of the mixing zone) with the Annual Report.

5.0 RECEIVING WATERBODY

5.1 Description of Receiving Waterbody

King Cove is approximately 1.5 square miles in area. A tidally influenced, large, shallow lagoon is located north of the facility and drains into King Cove waterbody.

5.2 Water Quality Standards

Regulations in 18 AAC 70 require that the conditions in permits ensure compliance with the WQS. The state's WQS are composed of use classifications, numeric and/or narrative WQC, and an Antidegradation Policy. The use classification system identifies the designated uses that each waterbody is expected to achieve. The numeric and/or narrative WQC are the criteria deemed necessary by the state to support the designated use classification of each waterbody. The Antidegradation Policy ensures that the existing uses and the level of water quality necessary to protect the uses are maintained and protected.

Waterbodies in Alaska are designated for all uses unless the water has been reclassified under 18 AAC 70.230 as listed under 18 AAC 70.230(e). Some waterbodies in Alaska can also have site-specific WQC per 18 AAC 70.235, such as those listed under 18 AAC 70.236(b).

The receiving water for the proposed discharges, King Cove, has not been reclassified, nor have site-specific WQC been established. Accordingly, King Cove must be protected for all marine use classes listed in 18 AAC 70.020(a)(2). These marine water designated use classes consist of the following: water supply for aquaculture, seafood processing, and industrial; water recreation for contact and secondary recreation; growth and propagation of fish, shellfish, other aquatic life, and wildlife; and harvesting for consumption of raw mollusks or other raw aquatic life.

5.3 Water Quality Status of Receiving Water

Any part of a waterbody for which the water quality does not or is not expected to meet applicable WQS is defined as a "water quality limited segment" and placed on the state's impaired waterbody list. Section 303(d) of the CWA requires states to develop a TMDL management plan for a waterbody determined to be water quality limited. The TMDL documents the amount of a pollutant a waterbody can assimilate without violating a state's WQS and allocates that load to known point sources and nonpoint sources.

King Cove has a TMDL for seafood residues, published by EPA in 1998. The TMDL set Peter Pan's SS WLA at 2,700,000 lbs/year, based on a one-acre ZOD. The permit implements the TMDL WLA for the facility (see Part 4.4.2).

5.4 Mixing Zone Analysis

In accordance with state regulations at 18 AAC 70.240, the Department has authority to authorize a mixing zone in a permit. A chronic mixing zone is sized to protect the ecology of the waterbody as a whole and an acute mixing zone is sized to prevent lethality to passing organisms.

The previous permit authorized a mixing zone for temperature and pH within a 25-foot radius around the end of each outfall and for color, turbidity, and residues within a 100-foot radius around the Outfall 003A discharge.

The applicant submitted an updated mixing zone application dated July 27, 2023. The applicant's submittals provided information to demonstrate consistency with state mixing zone regulations. The Department reviewed the submittals and conducted an independent analysis with CORMIX 12 to verify conformance with regulations and consistency with DEC mixing zone procedures.

Inputs to CORMIX included the maximum effluent concentration and the WQC for parameters which demonstrated RP to exceed WQC at the end of pipe prior to discharge. Other data inputs

required for the mixing zone modeling included the depth of the receiving water at the outfall, ambient current velocity, wind velocity, ambient temperature, and outfall specifications such as the size, direction, and number of ports. Based on the inputs, CORMIX predicted the distance at which the parameters would meet WQS.

Temperature demonstrated RP to exceed WQC at the end of pipe prior to discharge from Outfall 002A. No other data, collected within the past five years, on pollutants in Outfall 002A effluent was available for analysis. Additional data will be collected during this permit term (see Table 4). An analysis was performed to determine the size of mixing zone necessary to meet temperature WQS yet still be as small as practicable, and it resulted in increasing the mixing zone radius from the previous permit's 25 feet to 32 feet.

The discharge from Outfall 003A was not evaluated with CORMIX, due to lack of relevant effluent data. The collection of additional data (see Table 5) is required during this permit term to evaluate compliance with WQS and aid in future modeling efforts. Monitoring data for pH showed no excursions outside of WQS during 2016-2021, so no mixing zone for pH will be authorized. The 100-ft radius mixing zone for color, turbidity, and residues will be carried forward in this permit issuance.

APPENDIX C, Mixing Zone Analysis Checklist, outlines criteria that must be met in order for the Department to authorize a mixing zone. These criteria include the size of the mixing zone, treatment technology, existing uses of the waterbody, human consumption, spawning areas, human health, aquatic life, and endangered species. The following summarizes the Department's mixing zone analysis:

5.4.1 Size

In accordance with 18 AAC 70.240(k), the mixing zone must be as small as practicable. The Department determined that the mixing zone dimensions as requested by the applicant are as small as practicable.

The 32-foot radius mixing zone size for Outfall 002A was determined through modeling the temperature of the different discharge scenarios. The Department reviewed applicant temperature data submitted for Outfall 002A and verified modeling using CORMIX. There are no other mixing zones authorized near the facility's outfalls. The mixing zone authorized represents a small fraction of King Cove's total area.

The previous permit authorized a 25-foot radius mixing zone for pH. The Department reviewed the applicant's annual reports for pH limit violations. The monitoring data did not indicate reasonable potential for pH WQS excursions in the waterbody; thus, no mixing zone for pH was included in the permit.

In accordance with 18 AAC 70.240, the Department determined that the size of the mixing zones for Peter Pan's discharges is appropriate. The mixing zones are sized to ensure: 1) the WQC found in 18 AAC 70 are met at the boundary of the mixing zones, 2) the mixing zones are as small as practicable, and 3) compliance with all other applicable mixing zone regulations.

5.4.2 Technology

In accordance with 18 AAC 70.240(c)(1), the Department finds that available evidence reasonably demonstrates that the wastewater at Peter Pan will be treated to remove, reduce,

and disperse pollutants using methods found by the Department to be the most effective and technologically and economically feasible, consistent with statutory and regulatory treatment requirements. Since 2008, Peter Pan has treated seafood processing wastewater with 0.5 mm screening. The permit now requires the use of this installed 0.5 mm screening technology, at a minimum. Recovered seafood processing solids are delivered to the fish meal, bone meal, and fish oil plant, thereby reducing the residues loading to receiving waters.

Wastewater treatment systems currently in place at the facility reflect cost effective methods to meet the applicable regulatory requirements.

The nature and extent of discharge plumes in marine systems are influenced by tides, riverine input, wind intensity and direction, and thermal and saline stratification. Retaining the limited seafood processing mixing zone for color, residues, and turbidity is found appropriate.

5.4.3 Existing Use

In accordance with 18 AAC 70.240(b-c), the mixing zones have been appropriately sized to fully protect the existing uses of King Cove. The existing uses have been maintained and protected under the terms of the previous permit. The permit reissuance application does not propose any operational changes that would result in a lower quality effluent. The discharge neither partially nor completely eliminates an existing use of the waterbody outside boundaries of the mixing zones. Flushing is adequate to ensure full protection of uses of the waterbody outside of the mixing zones. There is no indication that toxicity exists at levels that might result in biological impairment or cause an effect or damage to the ecosystem that the Department considers so adverse that a mixing zone is not appropriate. DEC has determined that the existing uses and biological integrity of the waterbody will be maintained and fully protected under the terms of the permit as required by 18 AAC 70.240(c)(2-4).

5.4.4 Human Consumption

In accordance with the conditions of the permit, and in accordance with 18 AAC 70.240(d)(6) and (c)(4)(C), the pollutants discharged cannot produce objectionable color, taste, or odor in aquatic resources harvested for human consumption, nor can the discharge preclude or limit established processing activities or commercial, sport, personal use, or subsistence fish and shellfish harvesting.

There is no indication that the pollutants discharged have produced objectionable color, taste, or odor in aquatic resources harvested for human consumption. Additionally, the discharge has not precluded or limited established processing activities or commercial, sport, personal use, or subsistence fish and shellfish harvesting.

It is expected that the maximum expected effluent concentrations of pollutants will be diluted rapidly and that the mixing zones will not preclude or limit established fishery activities per 18 AAC 70.240(c)(4)(C). DEC has determined that pollutants discharged will neither produce objectionable color, taste, or odor in harvested aquatic resources for human consumption nor preclude or limit fish and shellfish harvesting per 18 AAC 70.240(d)(6) and (c)(4)(C).

5.4.5 Spawning Areas

The mixing zones are authorized in the marine waters of King Cove. Regulations at 18 AAC 70.240(e-f), which prohibit authorizing mixing zones in lakes, streams, rivers, or other flowing fresh waters in spawning areas unless certain requirements are met, do not apply. Discharges to fresh waters are not authorized under the permit.

5.4.6 Human Health

In accordance with 18 AAC 70.240(c-d), the mixing zones must be protective of human health and must not result in pollutants discharged at levels that will bioaccumulate, bioconcentrate, or persist above natural levels in sediments, water, or biota or at levels that otherwise will create a public health hazard through encroachment on a water supply or contact recreation uses. Peter Pan's effluent data was used in conjunction with applicable WQC, which serve the purpose of protecting human and aquatic life, to size the mixing zones to ensure all WQC are met in the waterbody at the boundaries of the mixing zones.

DEC has determined that the permit satisfies 18 AAC 70.240(d)(1-2) and 18 AAC 70.240(c)(4)(B) and that the level of treatment at Peter Pan is protective of human health.

5.4.7 Aquatic Life and Wildlife

In accordance with 18 AAC 70.240(c), (d), and (g), the mixing zones authorized in the permit shall be protective of aquatic life and wildlife. Pollutants for which the mixing zones will be authorized will not accumulate in concentrations outside of the mixing zones that are undesirable, present a nuisance to aquatic life, cause permanent or irreparable displacement of indigenous organisms, or result in a reduction in fish or shellfish population levels. It is expected that WQC will be met at the boundary of the authorized mixing zones, as dilution will occur relatively rapidly, and pollutants discharged will have a relatively short residence time in the mixing zones prior to mixing to WQC levels. The Department determined that the mixing zones will not create a significant adverse effect to fish spawning or rearing, form a barrier to migratory species, fail to provide a zone of passage, result in undesirable or nuisance aquatic life, result in permanent or irreparable displacement of indigenous organisms, or result in reduction in fish population levels and that 18 AAC 70.240(g)(1), (c)(4)(D-E,G), and (d)(5) are met.

5.4.8 Endangered Species

In accordance with 18 AAC 70.240(c)(4)(F), the authorized mixing zones will not cause an adverse effect on threatened or endangered species. DEC consulted the United States Fish and Wildlife Service (USFWS) website and the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) to identify any threatened or endangered species under their jurisdiction in the vicinity of Peter Pan's discharge. See Part 9.2 for summary information regarding critical habitat and endangered species.

No detrimental effects to fauna in the area have been documented with previously authorized mixing zones for the facility, nor do the mixing zones appear to pose an undesirable nuisance to aquatic life. Due to the short residence time of pollutants in the mixing zones, the Department has concluded that the mixing zones are sized to not cause an adverse effect on

threatened or endangered species in the vicinity of the discharge. DEC will provide a copy of the permit and fact sheet to NMFS and USFWS when they are public noticed. Any comments received from the agencies regarding endangered species will be considered prior to issuance of the permit.

6.0 ANTIBACKSLIDING

Regulations at 18 AAC 83.480 require that “effluent limitations, standards, or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit.” Also, 18 AAC 83.480(c) states that a permit may not be reissued “to contain an effluent limitation that is less stringent than required by effluent guidelines in effect at the time the permit is renewed or reissued.”

A significant change to permit monitoring requirements from the previous permit issuance was reducing the seafloor survey frequency from annual surveys to biennial surveys, if the permittee keeps the seafood waste deposits to less than 0.75 acres. DEC does not consider this permit condition to be less stringent than the last permit issuance. This is because the seafloor survey is more stringent by counting discontinuous waste deposits with greater than 50% coverage toward the 1.0-acre limit, and there are new information gathering requirements. Additionally, the permit has implemented new remediation planning if the ZOD is found to be greater than 1.0 acre in size.

Additionally, the mixing zone size for Outfall 002A was extended from a 25-foot radius to a 32-foot radius. However, the previous Outfall 001A mixing zone (25-foot radius) was eliminated, as the flows from the two outfalls have been combined. The effluent temperature limit for the combined effluent, 25 °C, remains the same as in the previous permit.

All other permit effluent limits, standards, and conditions in the permit are at least as stringent—if not more so—as in the previously issued permit and are consistent with 18 AAC 83.480. Accordingly, no further backsliding analysis is required for this permit issuance.

7.0 ANTIDEGRADATION

Section 303(d)(4) of the CWA states that, for waterbodies where the water quality meets or exceeds the level necessary to support the waterbody's designated uses, WQBELs may be revised as long as the revision is consistent with the state's Antidegradation policy. The state's Antidegradation policy is found in the 18 AAC 70 WQS regulations at 18 AAC 70.015. The Department's approach to implementing the Antidegradation policy is found in 18 AAC 70.016, *Antidegradation implementation methods for discharges authorized under the federal Clean Water Act*. Both the Antidegradation policy and the implementation methods are consistent with 40 CFR §131.12 and approved by EPA. This Part analyzes and provides rationale for the Department's decisions in the permit issuance with respect to the Antidegradation policy and implementation methods.

Using the policy and corresponding implementation methods, the Department determines a Tier 1 or Tier 2 classification and protection level on a parameter by parameter basis. A Tier 3 protection level applies to a Tier 3 designated water. At this time, no Tier 3 waters have been designated in Alaska.

Regulatory requirements of 18 AAC 70.015(a)(1) state that the existing water uses and the level of water quality necessary to protect existing uses must be maintained and protected (Tier 1 protection level).

King Cove has a TMDL for SS residues (see Part 5.3). Therefore, a Tier 1 antidegradation analysis is required for residues. Permit limits for SS residues are consistent with the final 1998 TMDL. This consistency ensures that existing uses and the level of water quality necessary to support them are maintained and protected, and no further analysis is required for that parameter.

This antidegradation analysis conservatively assumes that the Tier 2 protection level applies to all other parameters, consistent with 18 AAC 70.016(c)(1).

The state's Antidegradation policy in 18 AAC 70.015(a)(2) states that if the quality of water exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality must be maintained and protected, unless the Department authorizes a reduction in water quality (Tier 2 protection level).

The Department may allow a reduction of water quality only after the specific analysis and requirements under 18 AAC 70.016(b)(5)(A-C), 18 AAC 70.016(c)(7)(A-F), and 18 AAC 70.016(d) are met. The Department's findings are as follows:

18 AAC 70.016(b)(5)

(A) existing uses and the water quality necessary for protection of existing uses have been identified based on available evidence, including water quality and use related data, information submitted by the applicant, and water quality and use related data and information received during public comment;

(B) existing uses will be maintained and protected; and

(C) the discharge will not cause water quality to be lowered further where the department finds that the parameter already exceeds applicable criteria in 18 AAC 70.020(b), 18 AAC 70.030, or 18 AAC 70.236(b).

Per 18 AAC 70.020 and 18 AAC 70.050, all marine waters, including King Cove, are protected for all uses; therefore, the most stringent WQC found in 18 AAC 70.020 and in the *Alaska Water Quality Criteria Manual for Toxic and Other Deleterious Organic and Inorganic Substances* (DEC 2008) apply and were evaluated. The evaluation ensures existing uses and the water quality necessary for protection of existing uses of the receiving waterbody are fully maintained and protected.

The permit places limits and conditions on the discharge of pollutants. The limits and conditions are established after comparing TBELs and WQBELs and applying the more restrictive of those limits. The WQC, upon which the permit effluent limits are based, serve the specific purpose of protecting the existing and designated uses of the receiving water. WQBELs are set equal to the most stringent WQC available for any of the protected water use classes based on the driving parameter requiring the most dilution in the mixing zones. The permit also requires ambient water quality monitoring to evaluate possible impacts to the receiving waters and existing uses.

Pollutants of concern in seafood waste are primarily the biological wastes generated by processing raw seafood into a marketable form, along with chemicals used for processing or for cleaning processing equipment and fish containment structures in order to maintain sanitary conditions. Biological wastes are primarily seafood parts: heads, fins, bones, entrails, skins, blood, and shells. The chemicals used for cleaning are primarily disinfectants, which shall be used in accordance with EPA specifications. Refrigerant used is generally ammonia. The natural

fish waste degradation process also creates ammonia pollutant loading. Monitoring for ammonia and temperature is required to evaluate whether WQS are being met.

The permit includes numeric or narrative effluent limits addressing each of the pollutants of concern. The permit also requires the facility to implement a BMP Plan to minimize the production of waste and the discharge of pollutants to waters of the U.S., to ensure that the facility provides for the protection or attainment of existing and designated uses. Peter Pan has an existing BMP Plan, and it is updated as necessary to reflect current conditions at the facility.

The BMP Plan reflects current facility equipment, processes, operations, and outfalls in accordance with Permit Part 2.2 to ensure that the amount of discharged waste and pollutants is minimized. The facility must screen all seafood processing waste streams. Management staff and employees are trained on appropriate waste disposal and permit requirements. Key employees are properly trained to ensure that monitoring procedures in Permit Part 1.5 and Part 1.7 are adhered to and quality assurance requirements in Permit Part 2.1 are met. The facility also coordinates with fishermen and tender boats (who offload product at the dock) prior to and during the season to ensure that WQS for residues are not exceeded.

Permit Part 1.4.2.1 requires that discharges shall not cause or contribute to a violation of the WQS at 18 AAC 70.

The permit implements the annual TMDL WLA loading limitation for residues discharge to King Cove, which was calculated to be the level of SS input that would fully support the designated uses (while allowing permittees a zone of deposit for seafood waste accumulation not to exceed 1.0 acre). In compliance with 18 AAC 70.210, the WQC of 18 AAC 70.020(b)(20) and the antidegradation requirement of 18 AAC 70.015 may be exceeded within an authorized ZOD. However, the standards must be met at every point outside the boundary of the ZOD (18 AAC 70.210) or a mixing zone (18 AAC 70.240). The ZOD and mixing zones are sized to ensure that the existing uses of the waterbody as a whole are maintained and protected.

The Department concludes that the terms and conditions of the permit will be adequate to fully protect and maintain the existing uses of the water and that the findings under 18 AAC 70.016(b)(5) are met.

18 AAC 70.016(c)(7)(A –F) If, after review of available evidence, the Department finds that the proposed discharge will lower water quality in the receiving water, the Department will not authorize a discharge unless the Department finds that:

18 AAC 70.016(c)(7)(A) *the reduction of water quality meets the applicable criteria of 18 AAC 70.020(b), 18 AAC 70.030, or 18 AAC 70.236(b), unless allowed under 18 AAC 70.200, 18 AAC 70.210, or 18 AAC 70.240.*

As previously stated, Permit Part 1.4.2.1 requires that the discharge shall not cause or contribute to a violation of the WQS at 18 AAC 70. WQBELs are set equal to the most stringent WQC available under 18 AAC 70.020(b) for any of the protected water use classes. Because of the nature of the permitted discharges, other pollutants are not expected to be present in the discharges at levels that would cause, have the reasonable potential to cause, or contribute to an exceedance of any Alaska WQS, including the whole effluent toxicity limit at 18 AAC 70.030. Site-specific criteria as allowed by 18 AAC 70.235 have not been established for King Cove; therefore, 18 AAC 70.236(b) is not applicable.

The permit does not authorize a short-term variance under 18 AAC 70.200; therefore, a finding under this section does not apply.

The permit does authorize mixing zones under 18 AAC 70.240.

Peter Pan submitted updated mixing zone modeling in July 2023. The modeling submittals provided evidence that wastewater discharge would not violate WQS outside of each mixing zone.

Daily sea surface monitoring data dating back to 2014 has shown that, in general, the marine environment around and nearby the outfall quickly disperses wastewater.

Between 2000 and 2005, the facility collected water quality measurements at twelve locations around Outfall 003A at one-meter increments for DO, temperature, salinity, and density. Analytical results from all stations showed water quality measurements meeting WQS.

Discharges from the facility shall meet all WQC at the boundary of authorized mixing zones. Within the mixing zone for Outfall 002A, the WQC for temperature may be exceeded. Within the mixing zone for Outfall 003A, the WQC for color, turbidity, and residues may be exceeded.

The permit does authorize a zone of deposit under 18 AAC 70.210.

The Department may allow the deposition of substances on the seafloor of marine waters within specified limits. The permit establishes a 1.0-acre limit for seafood waste residues deposits and also limits the discharge of particles to 2,700,000 lbs SS/year. This poundage limit was developed as part of modeling performed to identify how many pounds of SS screened to 1.0 mm may be discharged per year while still meeting the 1.0-acre seafloor deposition limit.

Dive surveys performed since 2003 have determined that the waste deposition meeting the previous permit's 0.50-inch waste depth reporting threshold was less than one acre in size.

The WQC of 18 AAC 70.020(b) and the antidegradation requirements of 18 AAC 70.015 may be exceeded in a zone of deposit. However, the standards must be met at every point outside the ZOD. In no case may the WQS be violated in the water column outside the ZOD by any action, including leaching from, or suspension of, deposited materials. The Department will review monitoring information submitted by the permittee during the permit term to ensure WQC are being met outside the boundary of the ZOD.

The Department concludes that the reduction in water quality will not violate the WQS of 18 AAC 70.020, 18 AAC 70.235, or 18 AAC 70.030 outside of the authorized mixing zones or ZOD and that the finding under 18 AAC 70.016(c)(7)(A) is met.

18 AAC 70.016(c)(7)(B) each requirement under (b)(5) of this section for a discharge to a Tier 1 water is met;

See 18 AAC 70.016(b)(5) analysis and findings above.

18 AAC 70.016(c)(7)(C) point source and state-regulated nonpoint source discharges to the receiving water will meet requirements under 18 AAC 70.015(a)(2)(D); to make this finding the department will:

- i. Identify point sources and state-regulated nonpoint sources that discharge to, or otherwise impact, the receiving water; and*
- ii.*

- a. *Consider whether there are outstanding noncompliance issues with point source permits or required state-regulated nonpoint source best management practices;*
- b. *Consider whether receiving water quality has improved or degraded over time; and*
- c. *If necessary and appropriate, take actions that will achieve the requirements of 18 AAC 70.015(a)(2)(D); and*
- iii. *Coordinate with other state or federal agencies as necessary to comply with (i) and (ii) of this subparagraph.*

(i) & (ii-1st bullet) The Department reviewed available information on known point source discharges to the King Cove receiving water and found no outstanding noncompliance issues. There are no regulated nonpoint sources that discharge to, or otherwise impact, the receiving waters covered under the permit.

(ii-2nd bullet) As previously discussed, during the 1999-2004 permit term, the permittee was required to reduce the size of their zone of deposit from 11 acres down to less than 1.0 acre of seafood waste deposits. Additionally, the 1999 permit integrated the TMDL WLA for residues. The permittee was able to meet these permit requirements after mechanical remediation and installation of a fish meal plant as a source control strategy. Therefore, the operator has improved the water quality over time.

(ii- 3rd bullet) The requirements under 18 AAC 70.015(a)(2)(D) state:

(D) all wastes and other substances discharged will be treated and controlled to achieve
(i) for new and existing point sources, the highest statutory and regulatory requirements;
and

(ii) for nonpoint sources, all cost-effective and reasonable best management practices;

The highest statutory and regulatory requirements are defined at 18 AAC 70.015(d):

(d) For purposes of (a) of this section, the highest statutory and regulatory requirements are

(1) any federal technology-based effluent limitation identified in 40 C.F.R. 122.29 and 125.3, revised as of July 1, 2017 and adopted by reference;

(2) any minimum treatment standards identified in 18 AAC 72.050;

(3) any treatment requirements imposed under another state law that is more stringent than a requirement of this chapter; and

(4) any water quality-based effluent limitations established in accordance with 33 U.S.C. 1311(b)(1)(C) (Clean Water Act, sec. 301(b)(1)(C)).

The first part of the definition includes all federal TBELs. The permit requirements comply with the ELGs established in 40 CFR Part 408, Canned and Preserved Seafood Processing Point Source Category (adopted by reference at 18 AAC 83.010(g)). The ELGs require seafood processing wastes to be less than 0.5-inch in all dimensions prior to discharge. The permit applies a more stringent standard by requiring treatment of all seafood processing waste and wastewater to 0.5 mm or less.

The second part of the definition references the minimum treatment standards found at 18 AAC 72.050, which refers to domestic wastewater discharges only. The permit does not authorize the discharge of domestic wastewater, as the permittee routes domestic wastewater to

the City of King Cove Wastewater Treatment Facility. Therefore, a finding under this section is not applicable.

The third part of the definition refers to treatment requirements imposed under another state law. State regulations that apply to this permitting action include 18 AAC 70 and 18 AAC 72. The permit requires discharge to comply with WQS (18 AAC 70) and to comply with non-domestic waste and wastewater system requirements found in 18 AAC 72. The Department is not aware of more stringent requirements in other state laws.

The fourth part of the definition refers to WQBELs. A WQBEL is designed to ensure that the WQS of a waterbody are met. Section 301(b)(1)(C) of the CWA requires the development of permit limits necessary to meet WQS. Accordingly, the permit includes effluent limits for pH, temperature, TRC, and SS, along with monitoring for other pollutants of concern.

(iii) As discussed in Part 9.2, DEC has coordinated and will continue to coordinate with other state or federal agencies as necessary to comply with (i) and (ii).

After review of the methods of treatment and control and the applicable statutory and regulatory requirements, including 18 AAC 70, 18 AAC 72, and 18 AAC 83, the Department finds that the discharge authorized under this permit meets the highest applicable statutory and regulatory requirements; therefore, the 18 AAC 70.016(c)(7)(C) finding is met.

18 AAC 70.016(c)(7)(D)(i-ii) *the alternatives analysis provided under (4)(C-F) of this subsection demonstrates that*

(i) a lowering of water quality under 18 AAC 70.015(a)(2)(A) is necessary; when one or more practicable alternatives that would prevent or lessen the degradation associated with the proposed discharge are identified, the department will select one of the alternatives for implementation; and

(ii) the methods of pollution prevention, control, and treatment applied to all waste and other substances to be discharged are found by the department to be the most effective and practicable;

The Department found that lowering of water quality to accommodate important economic development in the area is necessary. Alternatives were evaluated based on practicability, as defined at 18 AAC 70.990(48). Alternatives, such as ceasing discharge, sending seafood processing waste streams to the City of King Cove's Wastewater Treatment Facility, and moving processing locations offshore were determined to be non-practicable. Discharge under the limitations and requirements of the permit is identified as the most practicable alternative; therefore, the 18 AAC 70.016(c)(7)(D)(i) finding is met.

Permit requirements are more stringent than the applicable TBELs and include meeting TMDL limits, screening seafood solids, implementing BMPs, installing flow meters, and broadening effluent monitoring to ensure WQS compliance and to assist with development of future permits.

With the requirement for the permittee to implement BMPs and to meet (and exceed) TBELs and meet WQS, the methods of pollution prevention, control, and treatment applied to all waste and other substances to be discharged are found by the Department to be the most effective and practicable; therefore, the 18 AAC 70.016(c)(7)(D)(ii) finding is met.

18 AAC 70.016(c)(7)(E) *except if not required under (4)(F) of this subsection, the social or economic importance analysis provided under (4)(G) and (5) of this subsection demonstrates*

that a lowering of water quality accommodates important social or economic development under 18 AAC 70.015(a)(2)(A);

Fishing is the core economy for much of coastal Alaska, where fish harvesting and processing often provide the only significant opportunities for private sector employment and where the fisheries support sector provides property and sales tax as large sources of local government revenues. The seafood industry provides workers in Alaska \$1.6 billion in labor income annually and accounts for \$5.9 billion in total annual economic activity in the state. Peter Pan Seafood Company, LLC is the only shore based processor operating in King Cove and is imperative to local economic stability, providing the primary market for much of the King Cove and Sand Point-based fishing fleet as well as receiving fish from various Bering Sea catcher vessels. Taxes generated from the Peter Pan King Cove facility provide a significant percentage of the City of King Cove and Aleutians East Borough revenue. The King Cove facility operates year round and provides jobs to nearly 500 workers during peak production times. City infrastructure such as harbor operations, city water, and several private enterprises have grown to support fishing and seafood processing operations. The King Cove facility has been discharging seafood processing wastewater from the current outfall location since at least 1978. In 1999, Peter Pan commenced operation of the meal plant, which handles fish waste from all species.

Discharges to King Cove are a necessary circumstance of the seafood processing industry, and allowing the discharge from the Peter Pan facility is necessary to accommodate important economic development in the area. Therefore, the 18 AAC 70.016(c)(7)(E) finding is met.

18 AAC 70.016(c)(7)(F) *18 AAC 70.015 and this section have been applied consistent with 33 U.S.C. 1326 (Clean Water Act, sec. 316) with regard to potential thermal discharge impairments.*

Discharges authorized under the permit are not associated with a potential thermal discharge impairment; therefore, the finding under 18 AAC 70.016(c)(7)(F) is not applicable.

8.0 OTHER PERMIT CONDITIONS

8.1 Quality Assurance Project Plan (QAPP)

The permittee is required to develop procedures to ensure that the monitoring data submitted are accurate and to explain data anomalies if they occur. The permittee is required to develop or update and implement the QAPP within 60 days of the final permit effective date. The QAPP shall consist of standard operating procedures the permittee must follow for collecting, handling, storing, and shipping samples; laboratory analysis; precision and accuracy requirements; data reporting, including method detection/reporting limits; and quality assurance/quality control criteria. The permittee is required to amend the QAPP whenever any procedure addressed by the QAPP is modified. The current QAPP shall be retained onsite and made available to the Department upon request.

8.2 Best Management Practices Plan

In accordance with AS 46.03.110(d), the Department may specify in a permit the terms and conditions under which waste material may be disposed. This permit requires the permittee to develop a BMP Plan in order to prevent or minimize the release and potential for the release of

pollutants to waters of the U.S. The permit contains certain BMP conditions that must be included in the BMP Plan. The permit requires the permittee to develop or update and implement the BMP Plan within 60 days of the final permit effective date. The plan shall be reviewed annually, be updated as necessary, be retained onsite, and be made available to the Department upon request.

8.3 Annual Report

The permit requires the permittee to complete and submit an Annual Report which compiles effluent and environmental monitoring data and reports permit violations, upset conditions, bypass conditions, and corrective actions undertaken to improve wastewater treatment and pollution prevention at the facility. The Annual Report provides a comprehensive record of wastewater discharge at the facility and its effect on the receiving water.

The permit includes a new requirement that the Annual Report provide a summary of any occurrences of leaks or breaks in the refrigeration/freezer systems that led to discharges to receiving waters. Discharging purged refrigerants untreated is prohibited. A recent review of processors statewide has revealed improper handling and discharge of these substances, and DEC wishes to collect further information. Discharging these compounds can cause extreme shifts in pH in the receiving water and can exert stress on or cause mortality to aquatic life (EPA, 1975). Due to similar concerns about impacts on receiving water quality, the permit also requires the permittee to provide a list of chemicals, disinfectants, cleaners, biocides, and food processing additives (salts, acids, bases, enzymes, etc.) that are used and discharged during the annual reporting period.

8.4 Electronic Reporting

E-Reporting Rule - Phase I (DMRs). The permittee must submit a DMR for each month by the 28th day of the following month. DMRs shall be submitted electronically through NetDMR, per Phase I of the E-Reporting Rule (40 CFR Part 127). For access to the NetDMR Portal, go to <https://cdxnodengn.epa.gov/oeca-netdmr-web/action/login>. DMRs submitted in compliance with the E-Reporting Rule are not required to be submitted as described in Permit Appendix A – Standard Conditions unless requested or approved by the Department. Any DMR data required by the permit that cannot be reported in a NetDMR field (e.g., receiving water data, etc.), shall be included as an attachment to the NetDMR submittal. DEC has established an e-Reporting Information website at <http://dec.alaska.gov/water/compliance/electronic-reporting-rule>, which contains general information about this reporting format. Training modules and webinars for NetDMR can be found at https://usepa.servicenowservices.com/oeca_icis.

E-Reporting Rule - Phase II (Other Reports). Phase II of the E-Reporting Rule will integrate electronic reporting for all other reports required by the permit (e.g., Annual Reports and Certifications) and implementation is expected to begin during the permit cycle. The permittee should monitor DEC's E-Reporting website at <http://dec.alaska.gov/water/compliance/electronic-reporting-rule> for updates on Phase II of the E-Reporting Rule and will be notified when they must begin submitting all other reports electronically. Until such time, other reports required by the permit shall be submitted in accordance with Permit Appendix A – Standard Conditions.

8.5 Standard Conditions

Permit Appendix A contains standard regulatory language that must be included in all APDES permits. These requirements are based on the regulations and cannot be challenged in the context of an individual APDES permit action. The standard regulatory language covers monitoring, recording, reporting requirements, compliance responsibilities, and other general requirements.

9.0 OTHER LEGAL REQUIREMENTS

9.1 Ocean Discharge Criteria Evaluation

Section 403(a) of the CWA, Ocean Discharge Criteria, prohibits issuing a permit under Section 402 of the CWA for a discharge into the territorial sea, the water of the contiguous zone, or the oceans except in compliance with Section 403. Permits for discharges seaward of the baseline of the territorial seas must comply with the requirements of Section 403, which include development of an Ocean Discharge Criteria Evaluation (ODCE). An interactive map depicting Alaska's baseline plus additional boundary lines is available at:

https://alaskafisheries.noaa.gov/mapping/arcgis/rest/services/NOAA_Baseline/MapServer

The map is provided for informational purposes only. The U.S. Baseline Committee makes the official determinations on baseline.

A review of the baseline maps revealed that the Peter Pan discharges are positioned landward of the territorial sea baseline. Therefore, Section 403 of the CWA does not apply to the permit, and an ODCE analysis is not required to be completed for this permit reissuance. Further, the permit requires compliance with WQS such that 40 CFR §125.122(b) is met, and therefore the discharge is presumed not to cause unreasonable degradation of the marine environment.

9.2 Endangered Species Act

NMFS is responsible for administration of the Endangered Species Act (ESA) for listed cetaceans, seals, sea lions, sea turtles, anadromous fish, marine fish, marine plants, and corals. All other species (including polar bears, walrus, and sea otters) are administered by the USFWS.

The ESA requires federal agencies to consult with NMFS and USFWS if their actions could beneficially or adversely affect any threatened or endangered species. As a state agency, DEC is not required to consult with these federal agencies regarding permitting actions. However, DEC voluntarily contacted the agencies on July 27, 2023 to notify them of the proposed permit issuance and to obtain threatened and/or endangered species or critical habitat near the discharges to King Cove. NOAA indicated that the discharge area includes critical habitat for the ESA listed western 'Distinct Population Segment' (DPS) of Steller Sea Lion and for endangered humpback whales, and it is in the range of endangered fin whales, sperm whales, and North Pacific right whales. The Department consulted USFWS's Information for Planning and Consultation system (<https://ecos.fws.gov/ipac>) to obtain lists of threatened and endangered species within USFWS jurisdiction in the facility's discharge area. The Department used this website to gain an approximate determination that the discharge vicinity may contain the endangered short-tailed albatross and the threatened Steller's eider and northern sea otter.

DEC concludes that with the exception of the Steller's eider, the localized effluent discharges authorized by this permit will have no effect on the continued existence of these species. In an April 2011 biological opinion, USFWS expressed concern that eiders are attracted to seafood processing activities by either macroinvertebrates feeding on seafood residues or by the residues themselves, causing high risk of predation by eagles and exposure to harmful agents in the waterbody (such as bacteria). Seafood processing can also pose risks to Steller's eiders through diesel fuel spills and the release of contaminated bilge water associated with off-loading vessel traffic.

However, it is valuable to record general observations of all listed species' interactions with seafood processing wastes, especially since northern sea otters and Steller sea lions have critical habitat in the discharge vicinity. Thus, the permit requires noting observations of listed species as part of the sea surface monitoring program.

This fact sheet and the permit will be submitted to the agencies for review during the public notice period, and any comments received from the agencies will be considered prior to permit issuance.

9.3 Essential Fish Habitat

Essential fish habitat (EFH) includes the waters and substrate (sediments, etc.) necessary for fish from commercially fished species to spawn, breed, feed, or grow to maturity. The Magnuson-Stevens Fishery Conservation and Management Act (January 21, 1999) requires federal agencies to consult with NOAA when a proposed discharge has the potential to adversely affect (reduce quality and/or quantity of) EFH.

As a state agency, DEC is not required to consult with NOAA on EFH. However, the Department consulted NOAA's EFH Mapper at <https://www.habitat.noaa.gov/apps/efhmapper/> to gain an approximate determination that the area of Peter Pan's discharges could be EFH for several species. However, no Habitat Areas of Particular Concern or EFH Areas Protected from Fishing were identified as overlapping with the discharge location.

NMFS maintains the following information link for EFH text descriptions and maps:
<http://www.habitat.noaa.gov/protection/efh/newInv/index.html>

DEC will provide NMFS with copies of the permit and fact sheet during the public notice period. Any comments received from NMFS regarding EFH will be considered prior to permit issuance.

9.4 Permit Expiration

The permit will expire five years from the effective date of the permit.

10.0 References

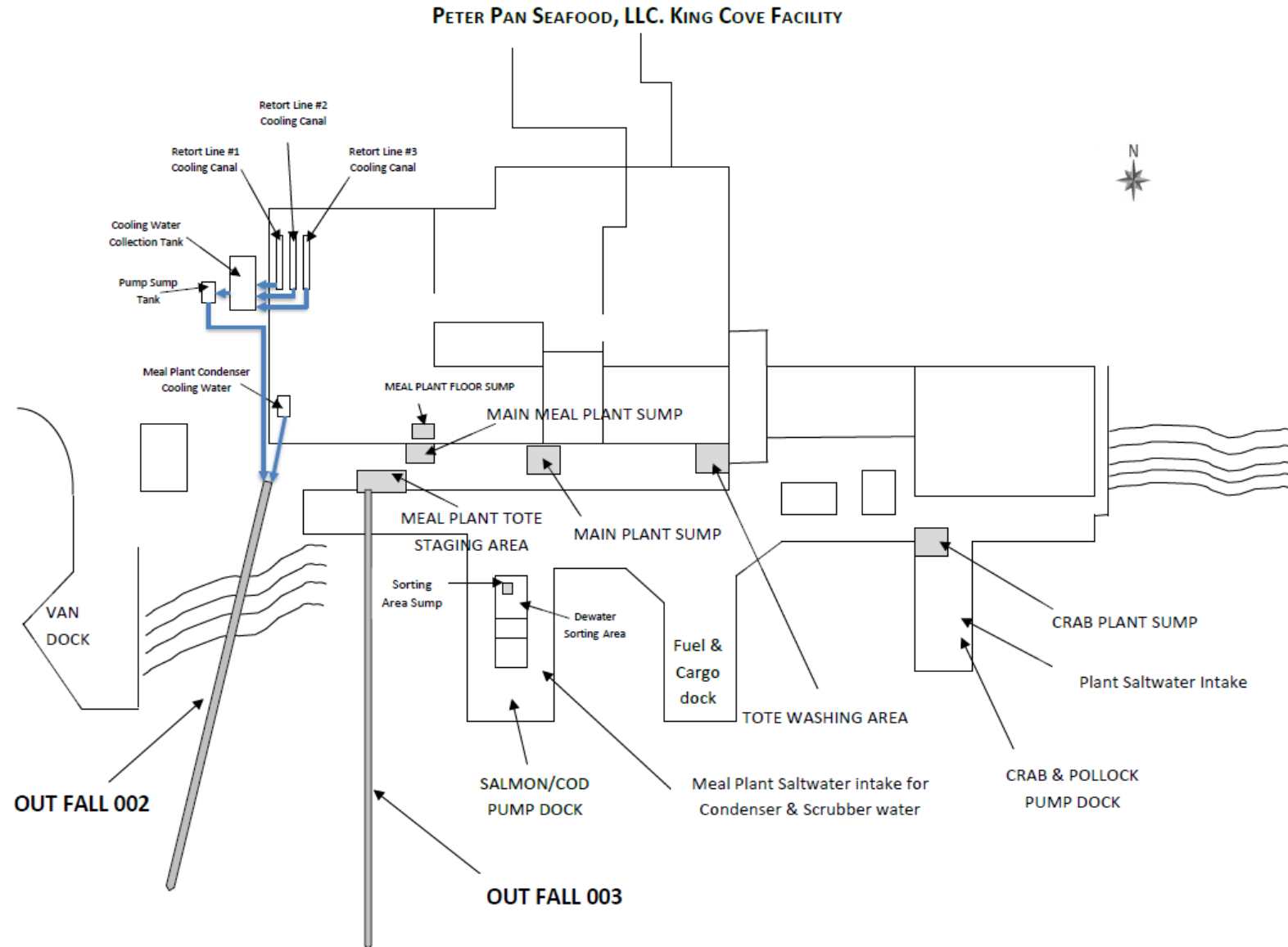
1. Alaska Department of Environmental Conservation, 2008. *Alaska Water Quality Criteria Manual for Toxic and Other Deleterious Organic and Inorganic Substances*, as amended through December 12, 2008.
2. Alaska Department of Environmental Conservation, 2014. *Alaska Pollutant Discharge Elimination System (ADPES) Permits Reasonable Potential Analysis and Effluent Limits Development Guide*, June 30, 2014.
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9. U.S. Fish & Wildlife Service, 2011. *Biological Opinion for Approval of the State of Alaska's Mixing Zones Regulation Section of the Alaska Water Quality Standards*. April 25, 2011.
10. U.S. Fish & Wildlife Service. *Information for Planning and Consultation*. Retrieved from <https://ecos.fws.gov/ipac/>

APPENDIX A. FACILITY INFORMATION

Figure 1: Outfall Locations



Figure 2: Facility Layout



Revised August, 2023

Figure 3: Water Flow Map

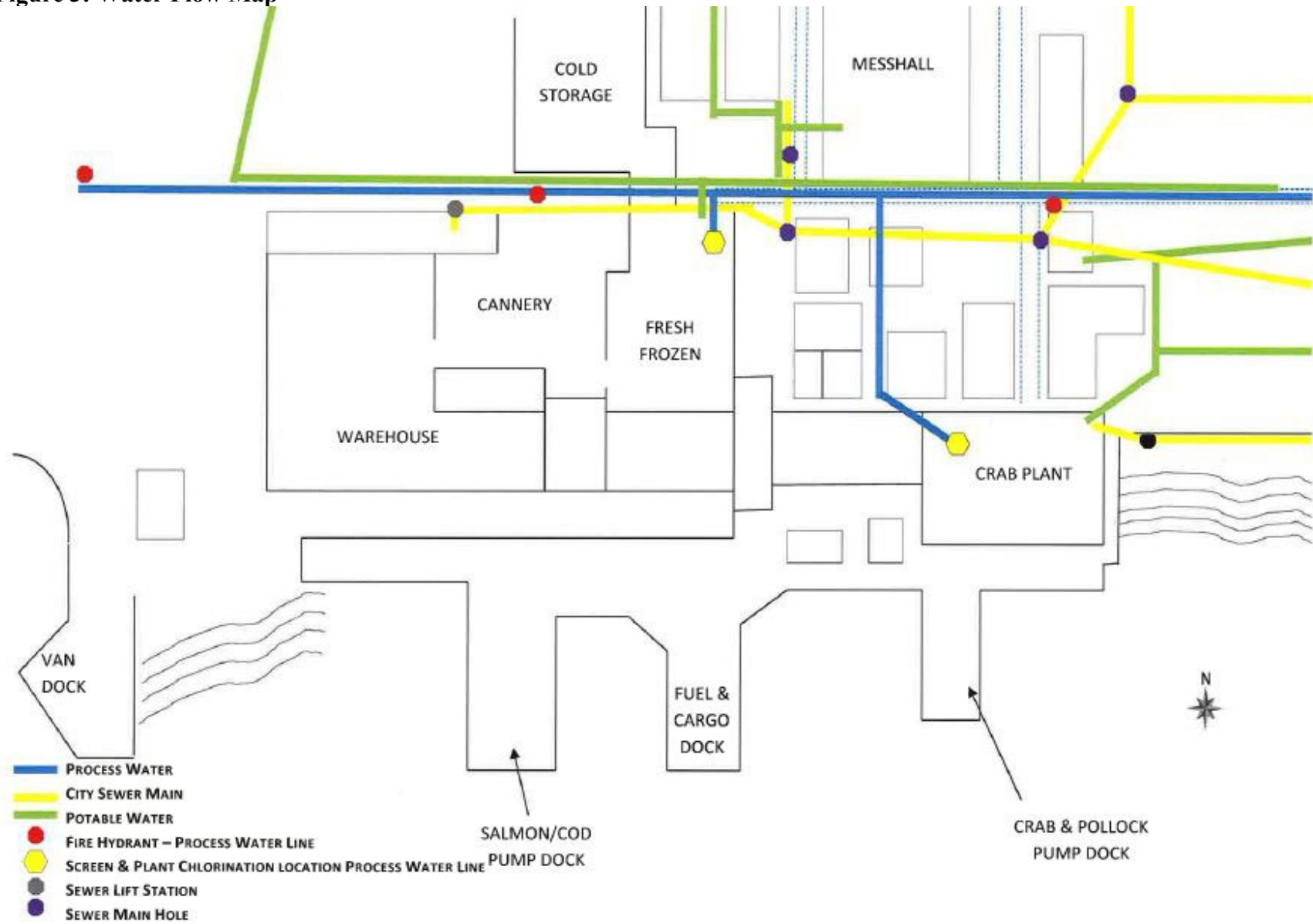


Figure 4: Cooling Water Flows

002 FLOW DIAGRAM

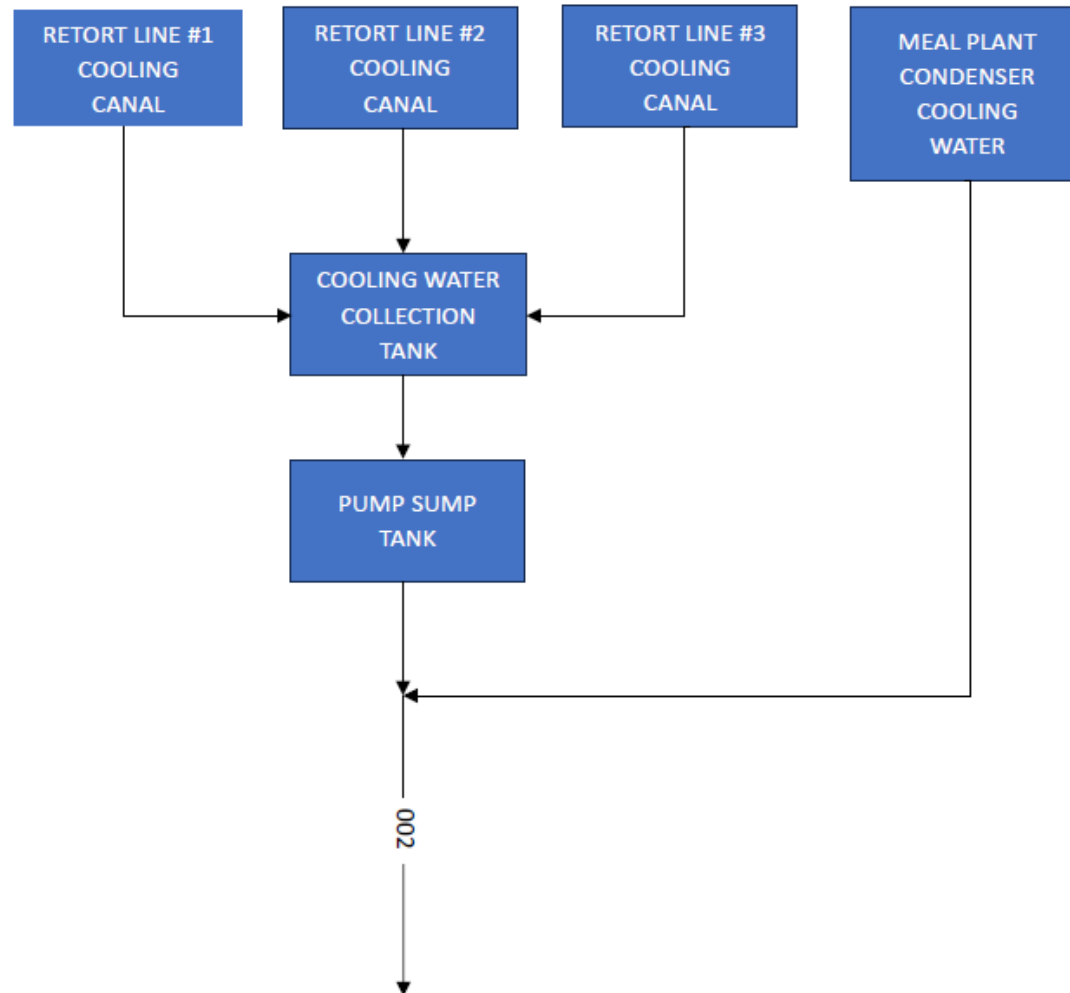


Figure 5: Main Plant Sump Flow Diagram

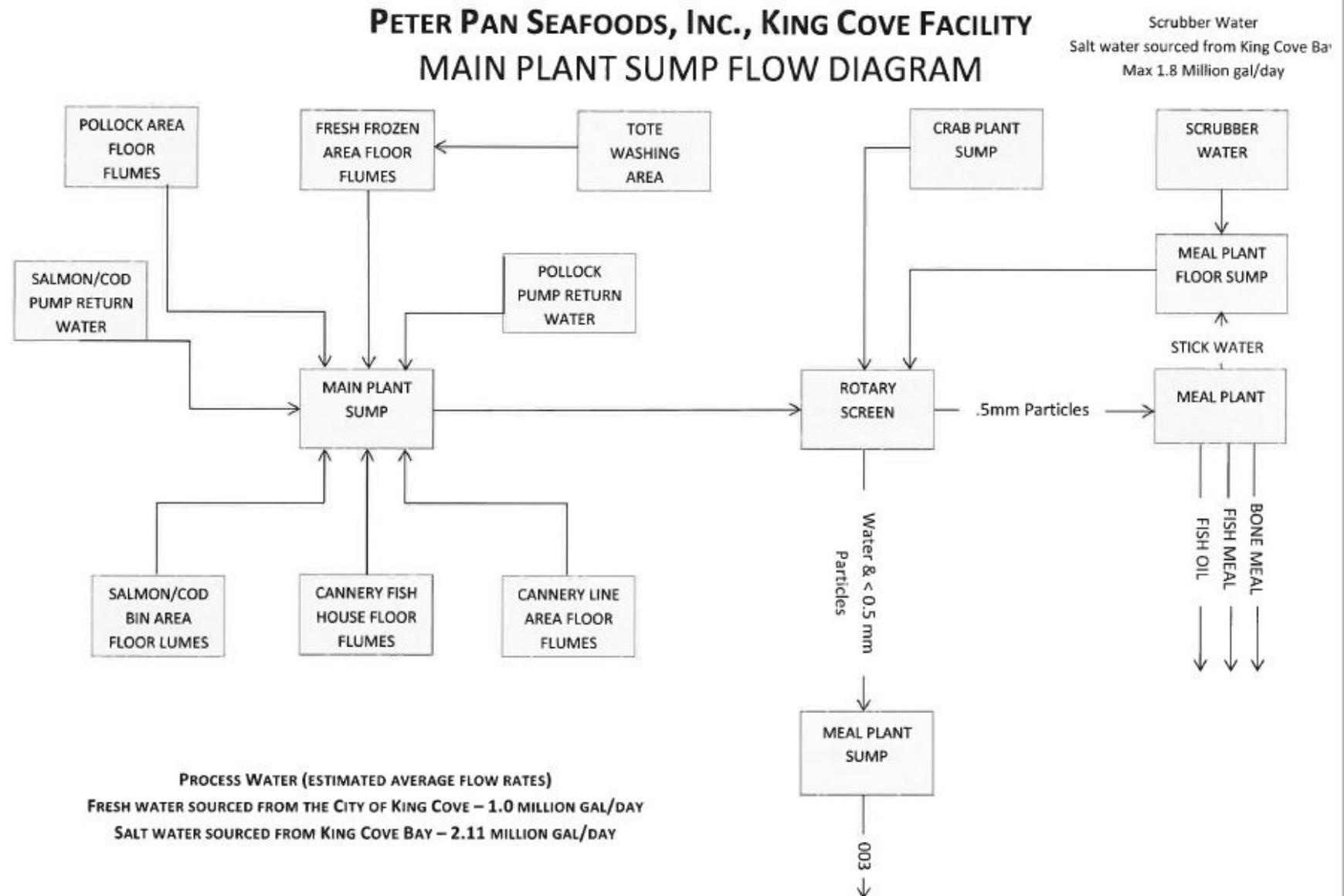
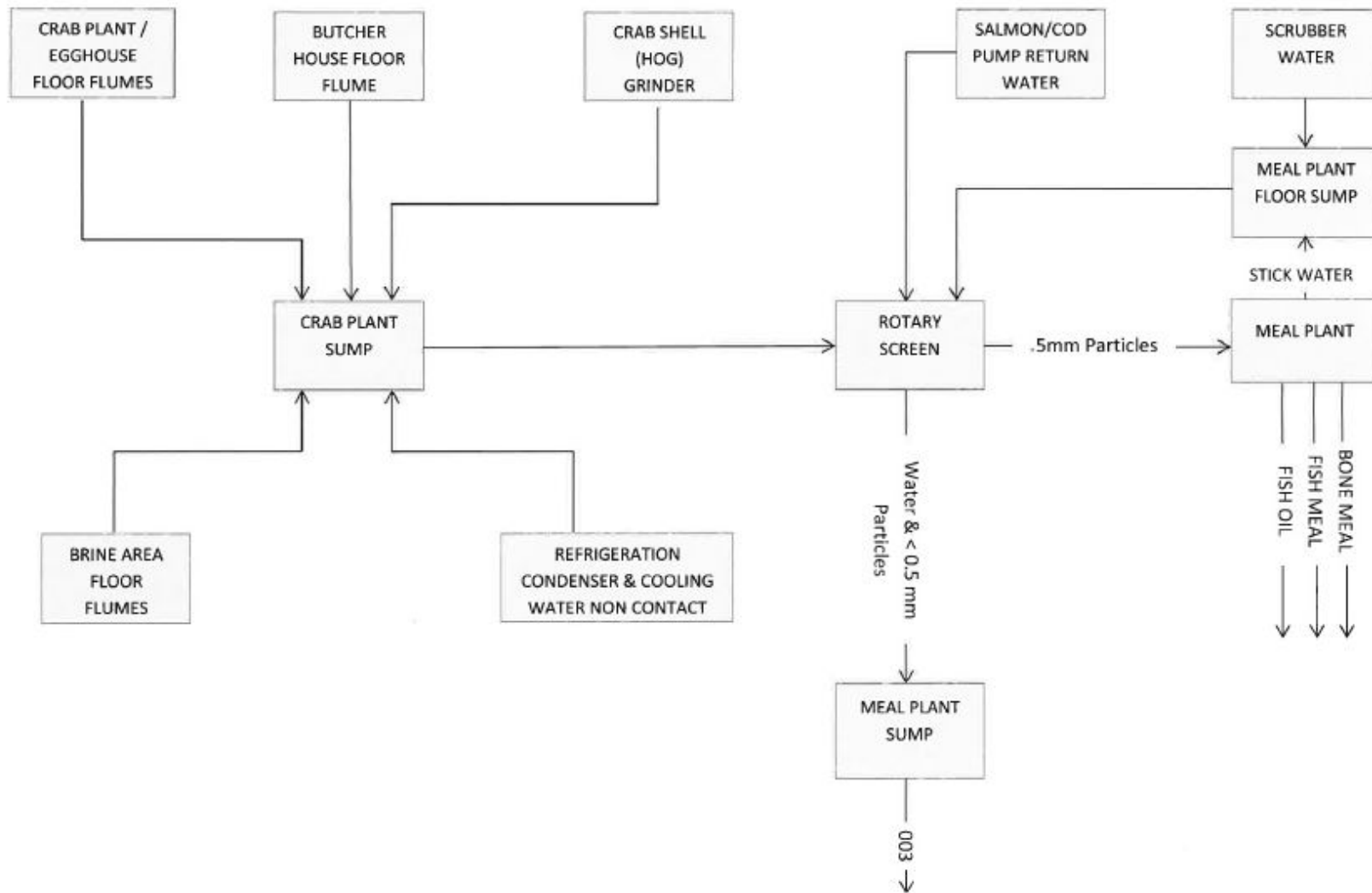


Figure 6: Crab Plant Sump Flow Diagram



APPENDIX B. BASIS FOR EFFLUENT LIMITATIONS

The Clean Water Act (CWA) requires seafood processing facilities to meet effluent limits based on available wastewater treatment technology, specifically technology-based effluent limits (TBELs). TBELs are national in scope and establish performance standards for all facilities within an industrial category or subcategory. The Alaska Department of Environmental Conservation (DEC or the Department) may find, by analyzing the effect of an effluent discharge on the receiving waterbody, that TBELs are not sufficiently stringent to meet Water Quality Standards (WQS). In such cases, the Department is required to develop more stringent water quality-based effluent limits (WQBELs), which are designed to ensure that the WQS of the receiving waterbody are met.

In establishing permit limits, the permit writer first determines which TBELs must be incorporated into the permit. When TBELs do not exist for a particular pollutant expected to be in the effluent, the Department must determine whether the pollutant may cause or contribute to an exceedance of a WQS for the waterbody. If a pollutant causes or contributes to an exceedance of a WQS, a WQBEL for the pollutant must be established in the permit.

B.1 Effluent Limitation Guideline

In June 1974, the Environmental Protection Agency (EPA) promulgated an effluent limitation guideline (ELG), 40 CFR Part 408 [adopted by reference at 18 AAC 83.010(g)(3)], for canned and preserved seafood processing point sources. The ELG regulations establish national TBEL performance standards.

The Peter Pan King Cove facility is an existing seafood processing facility that processes as described in Part 2.1.2. Accordingly, various subparts of 40 CFR Part 408 apply to the discharges. The facility is defined as a remote facility. Thus, the ELG limitation under all applicable Subparts requires that no pollutants be discharged which exceed 1.27 centimeters (0.5 inches) in any dimension. The permit's screening requirement, implemented per the currently installed technology, is more stringent than this ELG. The permit no longer implements the weighted sum applicable to the settleable solids (SS) effluent limit, which was a split between screened solids and ground solids (as established in the previous permit), because the permittee has indicated all solids are screened and sent to the meal plant.

B.2 Mass-Based Limitations

The regulation at 18 AAC 83.540 requires that effluent limits be expressed in terms of mass, unless they cannot appropriately be expressed by mass, it is infeasible, or the limits can be expressed in terms of other units of measurement. The mass based limits are expressed in pounds per day (lbs/day) and are calculated as follows:

Mass based limit (lbs/day) = pollutant concentration (mg/L) × flow (mgd) × 8.34 lbs/gallon

The permit requires mass-based reporting for biochemical oxygen demand (BOD₅), total suspended solids (TSS), oil and grease (O&G), and SS, based on the equations in Permit Appendix E and the reported discharge concentration and effluent flow. See further information about pollutant loading calculations in Part 4.4.2.

B.3 Water Quality – Based Effluent Limits

B.3.1 Statutory and Regulatory Basis

Regulations at 18 AAC 70.010 prohibit conduct that causes or contributes to a violation of the WQS. Regulations in 18 AAC 15.090 require that permits include terms and conditions to ensure criteria are met, including operating, monitoring, and reporting requirements.

The regulations require the permitting authority to make this evaluation using procedures that account for existing controls on point and nonpoint sources of pollution, the variability of the pollutant in the effluent, species sensitivity (for toxicity), and, where appropriate, dilution in the receiving waterbody. The limits must be stringent enough to ensure that WQS are met and must be consistent with any available Waste Load Allocation (WLA).

The CWA requires that the effluent limit for a particular pollutant be the more stringent of either TBELs or QBELs. TBELs are established by EPA for many industries in the form of ELGs and are based on available pollution control technology. The Department adopts the subject ELGs by reference in 18 AAC 83.010.

B.3.2 Reasonable Potential Analysis (RPA)

When evaluating the effluent to determine whether QBELs based on chemical-specific numeric water quality criteria (WQC) are needed, the Department projects the receiving waterbody concentration for each pollutant of concern downstream of where the effluent enters the receiving waterbody. The chemical-specific concentration of the effluent and receiving waterbody and, if appropriate, the dilution available from the receiving waterbody are factors used to project the receiving waterbody concentration. If the projected concentration of the receiving waterbody exceeds the WQC for a limited parameter, then there is a reasonable potential (RP) that the discharge may cause or contribute to an excursion above the applicable WQS, and a QBEL must be developed.

According to 18 AAC 70.990(38), a mixing zone is an area in a waterbody surrounding, or downstream of, a discharge where the effluent plume is diluted by the receiving water. WQC and limits may be exceeded within a mixing zone. A mixing zone can be authorized only when adequate receiving waterbody flow exists and the concentration of the pollutant of concern in the receiving waterbody is below the WQC necessary to protect the designated uses of the waterbody.

B.3.3 Procedure for Deriving Water Quality-Based Effluent Limits

The *Technical Support Document for Water Quality-Based Toxics Control* (TSD) (EPA, 1991) and the WQS recommend the flow conditions for use in calculating QBELs using steady-state modeling. The TSD, Alaska Pollutant Discharge Elimination System (APDES) guidance, and the WQS state the QBELs intended to protect aquatic life uses should be based on the lowest seven-day average flow rate expected to occur once every ten years (7Q10) for chronic WQC and the lowest one-day average flow rate expected to occur once every ten years (1Q10) for acute WQC. In marine settings, tidal velocities must be representative of critical conditions as well.

The first step in developing a QBEL is to develop a WLA for the pollutant. A WLA is the concentration or loading of a pollutant that the permittee may discharge without causing or contributing to an exceedance of WQS or a Total Maximum Daily Load (TMDL) in the receiving

waterbody. If a mixing zone is authorized in the permit, the WQS apply at all points outside the mixing zone.

In cases where a mixing zone is not authorized, either because the receiving waterbody already exceeds the WQC, the receiving waterbody flow or tidal velocity and duration is too low to provide dilution, or for some other reason one is not authorized, the WQC becomes the WLA. Establishing the WQC as the WLA ensures that the permittee will not cause or contribute to an exceedance of the WQC. The WQS at 18 AAC 70.020(a) designate standards for beneficial uses such as water supply; water recreation; and growth and propagation of fish, shellfish, other aquatic life, and wildlife.

B.3.4 Specific Water Quality-Based Effluent Limits

B.3.4.1 Residues

The WQS for marine “floating solids, debris, sludge, deposits, foam, scum, or” other residues are narrative. The most stringent standard, found at 18 AAC 70.020(b)(20)(A)(ii), states that residues “may not, alone or in combination with other substances or wastes, make the water unfit or unsafe for the use; cause a film, sheen, or discoloration on the surface of the water or adjoining shorelines; cause leaching of toxic or deleterious substances; or cause a sludge, solid, or emulsion to be deposited beneath or upon the surface of the water, within the water column, on the bottom, or upon adjoining shorelines.” This standard is carried from the previous permit and implemented through the effluent limits in Permit Part 1.5 and through seafloor monitoring in Permit Part 1.8 and sea surface and shoreline monitoring in Permit Part 1.9.

King Cove has a TMDL for residues. The beneficial use growth and propagation of fish, shellfish, other aquatic life, and wildlife is impaired by the exceedance of the WQS for residues, which is a result of SS discharges from seafood processing. On October 9, 1998, EPA completed a TMDL for Seafood Residues in the Waters of King Cove, Alaska. The TMDL established a SS WLA for the Peter Pan King Cove facility of 2,700,000 lbs per year, based on a 1.0-acre ZOD and screening to a particle size of one millimeter. The permit implements the TMDL WLA by establishing that ZOD limit and loading limit for SS. The permit requires screening to 0.5 mm or less, to reflect best available technology currently at the facility.

B.3.4.2 pH

Alaska WQS at 18 AAC 70.020(b)(18)(A)(i) (aquaculture) and 18 AAC 70.020(b)(18)(C) (Growth and Propagation of Fish, Shellfish, Other Aquatic Life, and Wildlife) state that the pH may not be less than 6.5 or greater than 8.5 SU.

The Department reviewed Peter Pan’s Outfall 003A pH effluent monitoring results from 2014 - 2022. During this time period, the minimum pH value observed was 6.32 SU and the maximum pH value was 7.6. The previous permit implemented WQBELs for pH that required a minimum of 6.5 SU and a maximum of 8.5 SU, monitored at a frequency of one time per week. This WQBEL is carried forward in the permit at Outfalls 002A and 003A.

B.3.4.3 *BOD₅*

The permit carries forward the BOD₅ monitoring from the previous permit. Monitoring is required weekly instead of only monthly to align the monitoring with other monitored parameters.

B.3.4.4 *Temperature*

The WQS at 18 AAC 70.020(b)(10)(A)(ii) for Water Supply - seafood processing state that temperature may not exceed 15 ° Celsius (°C).

DEC reviewed Annual Report data from 2014 - 2022 and found that effluent monitoring results demonstrate that the Peter Pan facility regularly produced effluent from the previous Outfall 001A and Outfall 002A at a temperature that exceeds WQS. The maximum observed temperature of the Outfall 001A and Outfall 002A blended effluents was 25 °C.

Because the effluent has RP to violate the temperature WQS, the Outfall 002A mixing zone and 25 °C end-of-pipe effluent limit needed to meet the WQS outside of the mixing zone was carried over from the previous permit. No historical or current basis for the pH parameter previously included in the mixing zone was found, so it is not included in the mixing zone in this permit. The permit requires the operator to continue monitoring effluent temperatures once per week and report the daily maximum and monthly average observed temperature each month.

B.3.4.5 *Dissolved Oxygen*

The WQS for water supply - aquaculture are the most stringent standards for dissolved oxygen (DO). The standards at 18 AAC 70.020(b)(15)(A)(i) require that “Surface DO concentration in coastal water may not be less than 6.0 mg/l for a depth of one meter except when natural conditions cause this value to be depressed. DO may not be reduced below 4 mg/l at any point beneath the surface. DO concentrations in estuaries and tidal tributaries may not be less than 5.0 mg/l except where natural conditions cause this value to be depressed. In no case may DO levels exceed 17 mg/l. The concentration of total dissolved gas may not exceed 110% of saturation at any point of sample collection.”

These WQS apply to the ambient monitoring required by Permit Part 1.7, using a monitoring scheme different from that in the previous permit (see discussion in Part 4.6.1).

B.3.4.6 *Total Residual Chlorine*

The most stringent WQS for total residual chlorine (TRC) to protect designated uses requires that concentrations may not exceed 13 micrograms per liter (µg/L) for acute marine aquatic life and 7.5 µg/L for chronic marine aquatic life [18 AAC 70.020(b)(23)(c)].

TRC monitoring is implemented in the permit at Outfall 002A and Outfall 003A. The compliance evaluation level for this parameter is 0.100 mg/L.

B.3.4.7 *Total Ammonia (as Nitrogen)*

Total ammonia is the sum of ionized (NH₄⁺) and un-ionized ammonia (NH₃). Temperature, pH, and salinity affect which form, NH₄⁺ or NH₃, is present. NH₃ is more toxic to aquatic organisms than NH₄⁺ and predominates with higher temperature and pH. NH₃ is less toxic

with increased salinity. Excess ammonia as nitrogen in the environment can lead to DO depletion, eutrophication, and toxicity to aquatic organisms.

Ammonia monitoring was implemented in the permit to gather data to determine whether ammonia discharged has the reasonable potential to cause or contribute to an excursion above state WQS.

B.3.5 Selection of Most Stringent Limitations

B.3.5.1 Waste Particle Dimension

As discussed in Part B.1, the TBEL applicable to the facility's seafood processing waste discharge is found at 40 CFR Part 408 and requires that pollutants discharged do not exceed 0.5 inch in any dimension. However, as discussed in Part 4.4.2, the 1998 King Cove SS TMDL determined a WQBEL necessary to protect state WQS. Accordingly, the permit requires that seafood processing waste and wastewater be treated to 0.5 mm or less and implements the TMDL WLA for SS. This is more stringent than the TBEL.

B.3.5.2 Parameter Summary

Table B-1 provides a summary and reference to those parameters that contain effluent limits at the point of discharge at the Peter Pan King Cove facility.

Table B- 1: Summary of Effluent Limitations

Parameter	Fact Sheet Reference	Type of Effluent Limit
Residues	APPENDIX B- Part B.3.4.1	Narrative WQBEL, implemented through Best Management Practices (BMPs) and ambient monitoring
pH	APPENDIX B- Part B.3.4.2	WQBEL, implemented at end of pipe
Temperature	APPENDIX B- Part B.3.4.4	WQBEL, dilution from mixing zone applied to meet WQS at boundary of mixing zone
Dissolved Oxygen (DO)	APPENDIX B- Part B.3.4.5	WQBEL, implemented through ambient monitoring
TRC	APPENDIX B- Part B.3.4.6	WQBEL, implemented at end of pipe
Waste Particle Dimension	APPENDIX B- Part B.3.5.1	TMDL limit (mass based), implemented at end of pipe

APPENDIX C. MIXING ZONE ANALYSIS CHECKLIST

The purpose of the Mixing Zone Checklist is to guide the permit writer through the mixing zone regulatory requirements to determine if all the mixing zone criteria at 18 AAC 70.240 are satisfied, as well as provide justification to authorize a mixing zone in an Alaska Pollutant Discharge Elimination System (APDES) permit. In order to authorize a mixing zone, all criteria must be met. The permit writer must document all conclusions in the permit Fact Sheet; however, if the permit writer determines that one criterion cannot be met, then a mixing zone is prohibited, and the permit writer need not include in the Fact Sheet the conclusions for when other criteria were met. See Part 5.4 for the Peter Pan Seafood Company, LLC King Cove Facility mixing zone analysis.

Criteria	Description	Resources	Regulation	MZ Approved Y/N
Size	Is the mixing zone as small as practicable?	<ul style="list-style-type: none"> • Technical Support Document for Water Quality Based Toxics Control • Part 5.4.1 • DEC's RPA Guidance • EPA Permit Writers' Manual 	18 AAC 70.240(k) 18 AAC 70.240(b)(1) - (b)(5) 18 AAC 70.240(d)(8)	Y
Technology	Were the most effective technological and economical methods used to disperse, treat, remove, and reduce pollutants?	Part 5.4.2	18 AAC 70.240(c)(1)	Y
Low Flow Design	For river, streams, and other flowing fresh waters.	N/A (discharge is to marine, not fresh, water)	18 AAC 70.240(l)	

Criteria	Description	Resources	Regulation	MZ Approved Y/N
Existing use	Does the mixing zone...			
	(1) partially or completely eliminate an existing use of the waterbody outside the mixing zone? If yes, mixing zone prohibited.	Part 5.4.3	18 AAC 70.240(c)(2)	N
	(2) impair overall biological integrity of the waterbody? If yes, mixing zone prohibited.	Part 5.4.3	18 AAC 70.240(c)(3)	N
	(3) provide for adequate flushing of the waterbody to ensure full protection of uses of the waterbody outside the proposed mixing zone? If no, then mixing zone prohibited.	Part 5.4.3	18 AAC 70.240(c)(2)	Y
	(4) cause an environmental effect or damage to the ecosystem that the Department considers to be so adverse that a mixing zone is not appropriate? If yes, then mixing zone prohibited.	Part 5.4.3	18 AAC 70.240(a)	N
Human consumption	Does the mixing zone...			
	(1) produce objectionable color, taste, or odor in aquatic resources harvested for human consumption? If yes, mixing zone may be reduced in size or prohibited.	Part 5.4.4	18 AAC 70.240(d)(6)	N

Criteria	Description	Resources	Regulation	MZ Approved Y/N
	(2) preclude or limit established processing activities of commercial, sport, personal use, or subsistence shellfish harvesting? If yes, mixing zone may be reduced in size or prohibited.	Part 5.4.4	18 AAC 70.240(c)(4)(C)	N
Spawning Areas	Does the mixing zone...			
	(1) discharge in a spawning area for anadromous fish or Arctic grayling, northern pike, rainbow trout, lake trout, brook trout, cutthroat trout, whitefish, sheefish, Arctic char (Dolly Varden), burbot, and landlocked coho, king, and sockeye salmon? If yes, mixing zone may be prohibited.	Part 5.4.5	18 AAC 70.240(f)	N
Human Health	Does the mixing zone...			
	(1) contain bioaccumulating, bioconcentrating, or persistent chemical above natural or significantly adverse levels? If yes, mixing zone prohibited.	Part 5.4.6	18 AAC 70.240(d)(1-2)	N
	(2) contain chemicals expected to cause carcinogenic, mutagenic, tetragenic, or otherwise harmful effects to human health? If yes, mixing zone prohibited.	Part 5.4.6		N

Criteria	Description	Resources	Regulation	MZ Approved Y/N
	(3) Create a public health hazard through encroachment on water supply or through contact recreation? If yes, mixing zone prohibited.	Part 5.4.6	18 AAC 70.240(c)(4)(B)	N
	(4) meet human health and aquatic life quality criteria at the boundary of the mixing zone? If no, mixing zone prohibited.	Part 5.4.6	18 AAC 70.240(c)(4), (d)(8)	Y
	(5) occur in a location where the Department determines that a public health hazard reasonably could be expected? If yes, mixing zone prohibited.	Part 5.4.6	18 AAC 70.240(k)(4)	N
Aquatic Life	Does the mixing zone...			
	(1) create a significant adverse effect to anadromous, resident, or shellfish spawning or rearing? If yes, mixing zone prohibited.	Part 5.4.7	18 AAC 70.240(c)(4)(G), (g)(1)	N
	(2) form a barrier to migratory species? If yes, mixing zone prohibited.	Part 5.4.7		N
	(3) fail to provide a zone of passage? If yes, mixing zone prohibited.	Part 5.4.7		N
	(4) result in undesirable or nuisance aquatic life? If yes, mixing zone prohibited.	Part 5.4.7	18 AAC 70.240(d)(5)	N

Criteria	Description	Resources	Regulation	MZ Approved Y/N
	(5) result in permanent or irreparable displacement of indigenous organisms? If yes, mixing zone prohibited.	Part 5.4.7	18 AAC 70.240(c)(4)(E)	N
	(6) result in a reduction in fish or shellfish population levels? If yes, mixing zone prohibited.	Part 5.4.7	18 AAC 70.240(c)(4)(D)	N
	(7) cause lethality to passing organisms? If yes, mixing zone prohibited.	Part 5.4.7	18 AAC 70.240(d)(7)	N
	(8) cause a toxic effect in the water column, sediments, or biota outside the boundaries of the mixing zone? If yes, mixing zone prohibited.	Part 5.4.7	18 AAC 70.240(c)(4)(A)	N
Endangered Species	Are there threatened or endangered species (T/E spp) at the location of the mixing zone? If yes, are there likely to be adverse effects to T/E spp based on comments received from USFWS or NOAA? If yes, will conservation measures be included in the permit to avoid adverse effects?	Part 5.4.8	Program Description, 6.4.1 #5 18 AAC 70.240(c)(4)(F)	Y